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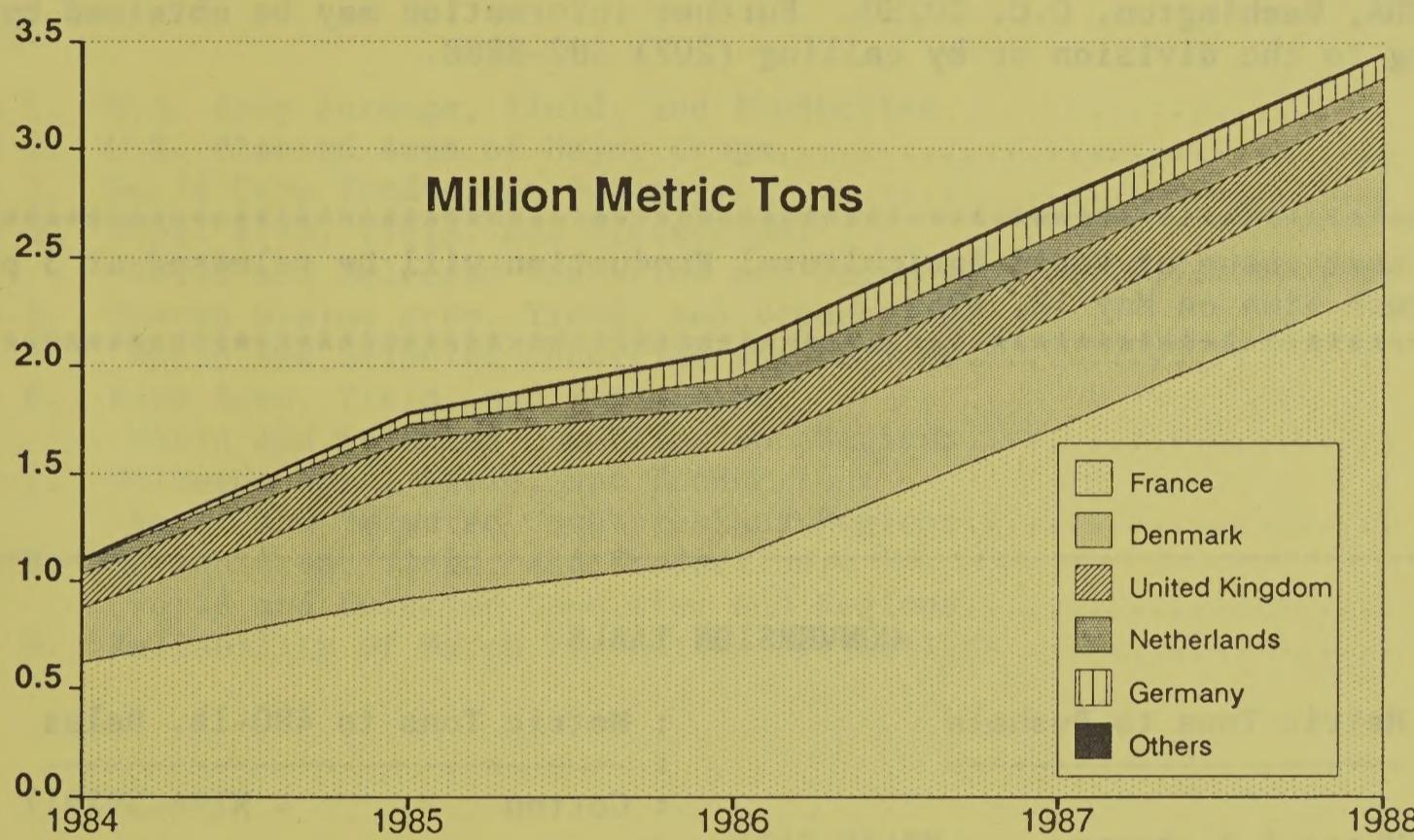




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APRIL 1989

# World Agricultural Production

## EC-12 FEED PEA PRODUCTION



## In this issue:

- World Pulse Production
- Winter Grains Outlook
- Cotton Production In India
- Strawberry Production In Mexico
- World Pineapple Production
- EC Forestry Production
- World Flaxseed Production

This report draws on information from USDA's global network of agricultural attaches and counselors, official statistics of foreign governments, other foreign source materials, and results of office analysis. Estimates of U.S. acreage, yield, and production are from USDA's Agricultural Statistics Board, except where noted. All numbers in this report are based on unrounded data and detail may not add to totals because of rounding. This report reflects official USDA estimates released in World Agricultural Supply and Demand Estimates (WASDE-229), April 11, 1989.

This report was prepared by the Foreign Production Estimates Division (FPED), FAS/USDA, Washington, D.C. 20250. Further information may be obtained by writing to the division or by calling (202) 382-8888.

\*\*\*\*\*  
\* The next issue of World Agricultural Production will be released at 3 p.m. \*  
\* eastern time on May 12, 1989. \*  
\*\*\*\*\*

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: : CONVERSION TABLE : :  
: : : :  
: Metric Tons to Bushels : Metric Tons to 480-lb. Bales :  
: ----- : ----- :  
: : : :  
: Cotton = MT\*4.592917 :  
: : : :  
: Wheat & Soybeans = MT\*36.7437 :  
: Corn, Sorghum, Rye = MT\*39.36825 :  
: Barley = MT\*45.929625 :  
: Oats = MT\*68.894438 : Metric Tons to Hundredweight :  
: ----- : ----- :  
: 1 hectare = 2.471044 acres : Rice = MT\*22.04622 :  
: 1 kilogram = 2.204622 pounds :  
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## PRODUCTION HIGHLIGHTS FOR 1988/89

**WHEAT:** World production for 1988/89 is estimated at 500.8 million metric tons, up 1.2 million or less than 1 percent from last month, but down less than 1 percent from last year's harvest. Important changes from a month ago include the following:

- o Brazil Production is forecast at 5.8 million tons, up 0.3 million or 5 percent from last month, but down 5 percent from last year. The revision is based on official production estimates.
- o Egypt Production is forecast at 2.8 million tons, up 0.3 million or 13 percent from last month and up 16 percent from last year. The increase is based on official numbers, which indicate better yields than originally estimated.
- o North Korea Production is estimated at 0.8 million tons, up 0.2 million or 33 percent from last month, but unchanged from last year. The increase is based on revised historical statistics reflecting higher estimated yields.

**COARSE GRAINS:** World production for 1988/89 is estimated at 723.3 million tons, up 2.0 million or less than 1 percent from last month, but down 9 percent from last year. Important changes from a month ago include the following:

- o Brazil Production is forecast at 24.7 million tons, up 1.0 million or 4 percent from last month, but down 3 percent from last year. The increase is due to greater estimated corn production. Beneficial growing conditions throughout most areas have resulted in higher yields.
- o South Africa Production is estimated at 11.7 million tons, up 0.9 million or 8 percent from last month and up 48 percent from last year. Excellent growing conditions throughout the season have boosted estimated corn yields to the second highest level on record. The corn harvest is underway.
- o Other W. Europe Production is estimated at 11.2 million tons, up 0.4 million or 3 percent from last month and up 3 percent from last year. Estimates of all coarse grains were raised for Austria.
- o EC-12 Production is estimated at 89.0 million tons, up 0.3 million or less than 1 percent from last month and up 8 percent from last year. The increase is due to higher estimated corn yield in Greece.

- o North Korea Production is estimated at 3.5 million tons, up 0.3 million or 8 percent from last month, but unchanged from last year. The increase is due to revised historical data for corn production based on higher estimated yields.
  - o Eastern Europe Production is estimated at 61.1 million tons, up 0.2 million or less than 1 percent from last month, but down 5 percent from last year. Rye and mixed grain yields are estimated higher for Poland.
  - o Argentina Production is estimated at 8.3 million tons, down 0.7 million or 8 percent from last month and down 37 percent from last year. Harvested area estimates were reduced for both corn and sorghum because of drought effects.
  - o Mexico Production is estimated at 14.4 million tons, down 0.3 million or 2 percent from last month and down less than 1 percent from last year. Sorghum yields are estimated lower due to hot, dry weather in the northeastern winter production areas of the country.
- RICE (MILLED-BASIS):** World production for 1988/89 is estimated at 322.8 million tons, down less than 1 percent from last month, but up 3 percent from the 1987/88 crop. Foreign production in 1988/89 is the second largest on record and is projected at 317.7 million tons, an increase of 9.9 million or 3 percent from 1987/88.
- o Burma Production is estimated at 7.3 million tons, down 1.4 million or 16 percent from last month, but up 13 percent from last year. Decreases were made in both current and historical estimates.
  - o Pakistan Production is estimated at 3.1 million tons, down 0.2 million or 6 percent from last month and down 4 percent from last year. The decrease is attributed to damage from severe September flooding in the rice areas of Punjab and Sind Provinces.
  - o Brazil Production is forecast at 7.2 million tons, up 0.4 million or 5 percent from last month, but down 10 percent from last year. The increase is due to higher yields, resulting from generally excellent growing conditions in most production areas.

**OILSEEDS:** World production for 1988/89 is forecast at 198.8 million tons, up less than 1 percent from last month, and down 7.8 million tons or 4 percent from last year's output. U.S. production is forecast at 50.1 million tons, up slightly from last month and down 17 percent from last year. Foreign production is forecast at a record 148.8 million tons, up slightly from last month, and up 2.7 million tons or 2 percent from last year.

- \* **Soybeans:** World production for 1988/89 is forecast at 93.1 million tons, down 0.3 million from last month and down 10 million or 9.7 percent from last year. Significant changes from last month include:

- o **Argentina** Production is estimated at 8.3 million tons, down 0.2 million or 7 percent from last month and down 16 percent from last year. Yields of second crop soybeans are expected to be particularly poor due to hot, dry weather during the vegetative stage of the crop.

- \* **Cottonseed:** World production for 1988/89 is forecast at 32.2 million tons, down slightly from last month and up 1.2 million or 4 percent from last year.

- \* **Peanuts:** World production for 1988/89 is forecast at 21.6 million tons, down 0.1 million from last month, but up 2 million or 9 percent from last year. Significant changes from last month include:

- o **Argentina** Production is estimated at 0.27 million tons, down 0.1 million or 32 percent from last month and down 40 percent from last year. Lower yields are estimated due to dry weather during vegetative development of the crop.

- \* **Sunflowerseed:** World production for 1988/89 is forecast at 21 million tons, up 0.1 million from last month, but up 2 percent from last year. Significant changes from last month include:

- o **United States** Production is estimated at 0.8 million tons, up 0.1 million from last month, but still 29 percent below last year. Inclusion of Kansas in the data for the first time accounts for the change from a month ago.

- \* **Rapeseed:** World production for 1988/89 is estimated at 21.7 million tons, up 0.5 million or 3 percent from last month, and down 1.2 million or 5 percent from last year. Significant changes from last month include:

- o **India** Production is estimated at 3.5 million tons, up 0.5 million or 17 percent from last month, but up 13 percent from last year. The increase is attributed to prolonged cool winter conditions and the lack of pest or disease infestations.

- \* **Flaxseed**: World production for 1988/89 is estimated at 1.8 million tons, unchanged from last month, but down 19 percent from last year.
- \* **Copra**: World production for 1988/89 is estimated at 4.6 million tons, reduced marginally from last month, but still up 0.3 million tons from last year's total.
- \* **Palm Kernels**: World production for 1988/89 is forecast at 2.9 million tons, up marginally by 28,000 tons from last month and up 0.2 million or 8 percent from last year.
- \* **Palm Oil**: World production for 1988/89 is forecast at 9.4 million tons, unchanged from last month and up 0.8 million or 10 percent from last year.

**COTTON**: World production for 1988/89 is estimated at 84.3 million bales, down 0.1 million or less than 1 percent from last month, but up 5 percent from 1987/88. Foreign production is estimated at 68.8 million bales, down 0.1 million or less than 1 percent from last month, but up 4 percent from last season. U.S. production is estimated at 15.4 million bales, unchanged from last month, but up 5 percent from a year ago. A significant change from last month is:

o **Syria**

Production is estimated at 0.6 million bales, down 0.1 million or 14 percent from last month, but up 25 percent from last year. The reduction is based on lower estimated yield.

Table 1

## U.S. Crop Acreage, Yield, and Production 1/

Commodity	--Harvested Area--			--Yield--				--Production--			
	Prel.	Proj.		Prel.	1988/89 Proj.		Prel.	1988/89 Proj.		Prel.	1988/89 Proj.
	1986/87	1987/88	1988/89	1986/87	1987/88	March	April	1986/87	1987/88	March	April
All Wheat	60.7	56.0	53.2	34.4	37.7	34.1	34.1	2091.6	2107.5	1811.3	1811.3
Winter	43.2	39.3	39.8	35.2	39.8	39.2	39.2	1521.5	1565.2	1561.0	1561.0
Other	17.5	16.6	13.4	32.5	32.6	18.7	18.7	570.1	542.3	250.3	250.3
Rye	0.7	0.7	0.6	28.8	29.0	24.8	24.8	19.5	19.8	15.0	15.0
Soybeans	58.3	57.0	57.4	33.3	33.7	26.8	26.8	1940.1	1922.8	1538.7	1538.7
Corn	69.2	59.2	58.2	119.3	119.4	84.6	84.6	8249.9	7072.1	4921.2	4921.2
Sorghum	13.9	10.6	9.1	67.7	69.7	63.8	63.8	938.1	739.2	577.6	577.6
Barley	12.0	10.1	7.5	50.8	52.7	38.6	38.6	610.5	529.5	290.5	290.5
Oats	6.9	6.9	5.6	56.3	54.0	39.1	39.1	386.4	374.0	218.8	218.8
Total Feedgrains	41.2	35.1	32.5	6.1	6.1	4.6	4.6	252.3	215.4	149.2	149.2
Rice	2.4	2.3	2.9	5,651	5,555	5,511	5,511	133.4	129.6	159.5	159.5
All Cotton	8.5	10.0	11.9	552	706	612	623	9.7	14.8	15.4	15.4

Table 2

## U.S. Planted Area of Major Crops

Year	Wheat						Feedgrains							
	Winter	Other	Total	Rye	Rice	Corn	Sorghum	Barley	Oats	Total	Soybeans	Cotton	All	Total Maj
--Million Acres--														
1986/87	54.0	18.1	72.1	2.4	2.4	76.7	15.3	13.1	14.7	119.8	60.4	10.0	267.0	
1987/88 Prel.	48.8	17.0	65.8	2.5	2.4	65.7	11.8	11.0	18.0	106.5	58.0	10.4	245.6	
1988/89 Proj.														
March	48.8	16.7	65.5	2.4	2.9	67.6	10.4	9.7	13.9	101.6	58.9	12.5	243.8	
April	48.8	16.7	65.5	2.4	2.9	67.6	10.4	9.7	13.9	101.6	58.9	12.5	243.8	

1/ Estimates from USDA Agricultural Statistics Board.

Table 3  
World Crop Production Summary

Commodity	World	Total	North America	Europe	Asia	South America	Selected Other Countries	All Other Countries	
<b>--Million Metric Tons--</b>									
Wheat	530.6	473.7	56.9	31.4	4.5	72.0	4.3	39.1	92.3
1986/87	504.0	446.6	57.4	26.0	3.7	71.4	4.0	39.8	83.3
1987/88 prel.									
1988/89 proj.	499.6	450.3	49.3	15.7	3.2	74.9	3.7	45.1	84.5
March	499.6	450.3	49.3	15.7	3.2	75.0	3.9	45.1	84.5
April	500.8	451.5	49.3	15.7					
Coarse Grains	835.6	582.8	252.8	25.5	14.9	81.7	12.3	73.9	105.9
1986/87	792.3	576.4	215.9	25.5	14.5	82.4	10.9	64.6	113.7
1987/88 prel.									
1988/89 proj.	721.3	571.7	149.6	19.6	14.7	88.7	10.8	60.9	96.5
March	721.3	571.7	149.6	19.6	14.4	89.0	11.2	61.1	96.5
April	723.3	573.7							
Rice (milled)	318.3	314.0	4.3	0.0	0.4	1.3	0.0	0.2	120.6
1986/87	311.9	307.8	4.1	0.0	0.4	1.3	0.0	0.2	122.1
1987/88 prel.									
1988/89 proj.	324.2	319.1	5.1	0.0	0.3	1.3	0.0	0.2	119.7
March	324.2	319.1	5.1	0.0	0.3	1.3	0.0	0.2	119.7
April	322.8	317.7							
Total Grains 1/	1,684.5	1,370.5	314.0	56.9	19.7	155.0	16.6	113.2	199.9 1/
1986/87	1,608.2	1,330.9	277.3	51.5	18.6	155.1	14.9	104.6	198.7 1/
1987/88 prel.									
1988/89 proj.	1,545.1	1,341.2	203.9	35.3	18.1	164.9	14.6	106.3	182.9
March	1,545.1	1,341.2	203.9	35.3	17.9	165.3	15.1	106.5	182.9
April	1,546.9	1,343.0							
Oilseeds 2/	194.2	134.8	59.4	5.8	1.0	8.4	0.5	6.0	11.2
1986/87	206.6	146.0	60.6	5.9	1.2	12.1	0.5	5.3	11.8
1987/88 prel.									
1988/89 proj.	198.6	148.6	50.0	5.9	0.8	11.5	0.6	5.3	12.6
March	198.6	148.8	50.1	5.9	0.8	11.5	0.6	5.4	12.6
April	198.8								
<b>--Million 480-Pound Bales--</b>									
Cotton	70.4	60.7	9.7	0.0	0.6	1.3	0.0	0.1	12.2
1986/87	80.6	65.9	14.8	0.0	1.0	1.2	0.0	0.1	11.3
1987/88 prel.									
1988/89 proj.	84.4	69.9	15.4	0.0	1.3	1.6	0.0	0.1	12.7
March	84.4	68.8	15.4	0.0	1.3	1.6	0.0	0.1	12.7
April	84.3	68.8							

1/ Includes total of wheat, coarse grains, and rice (milled) shown above. Estimates of Soviet total grain production, including wheat, coarse grains, rice (rough), minor grains, and pulses are 210.1 million tons in 1986/87; 211.4 million in 1987/88, and 195.0 million forecast in 1988/89.

2/ Totals for major regions and countries and other countries shown elsewhere in this report, while world and total foreign also include copra and palm kernels for countries shown plus other countries.

Note: Entries of '0.0' indicate no reported or insignificant production.

Table 4

## Wheat Area, Yield, and Production: World and Selected Countries and Regions

Country/Region	---Area---			---Yield---				---Production---			
	Prel.	Proj.		Prel.	1988/89 Proj.		Prel.	1988/89 Proj.			
	: 1986/87	1987/88	1988/89	: 1986/87	1987/88	March April	: 1986/87	1987/88	March April		
	---Million Hectares---				---Metric Tons Per Hectare---				---Million Metric Tons---		
World	228.1	219.8	219.2	2.33	2.29	2.28	2.29	530.6	504.0	499.6	500.8
United States	24.6	22.6	21.5	2.32	2.53	2.29	2.29	56.9	57.4	49.3	49.3
Total Foreign	203.5	197.2	197.6	2.33	2.26	2.28	2.28	473.7	446.6	450.3	451.5
Maj. Foreign Exporters	46.1	43.3	42.2	2.79	2.74	2.66	2.66	128.5	118.6	112.3	112.4
Argentina	5.0	4.8	4.5	1.79	1.84	1.69	1.69	8.9	8.8	7.6	7.6
Australia	11.1	9.1	9.3	1.45	1.37	1.52	1.52	16.1	12.4	14.1	14.1
Canada	14.2	13.5	12.9	2.20	1.93	1.21	1.21	31.4	26.0	15.7	15.7
EC-12	15.7	15.9	15.5	4.58	4.49	4.84	4.85	72.0	71.4	74.9	75.0
Major Importers	98.1	95.4	97.4	2.40	2.36	2.38	2.39	235.5	225.4	231.7	232.3
Brazil	3.9	3.5	3.5	1.44	1.77	1.59	1.68	5.6	6.1	5.5	5.8
China	29.6	28.8	28.9	3.04	3.05	3.03	3.03	90.0	87.8	87.5	87.5
Eastern Europe	10.5	10.6	10.7	3.73	3.77	4.20	4.20	39.1	39.8	45.1	45.1
Egypt	0.5	0.6	0.6	3.80	4.23	4.20	4.76	1.9	2.4	2.5	2.8
Other N. Africa */	4.6	5.1	4.4	1.23	1.01	1.25	1.25	5.7	5.2	5.5	5.5
Japan	0.2	0.3	0.3	3.56	3.19	3.62	3.62	0.9	0.9	1.0	1.0
USSR	48.7	46.7	49.0	1.89	1.78	1.72	1.72	92.3	83.3	84.5	84.5
Other Foreign	59.3	58.5	58.0	1.85	1.75	1.84	1.84	109.7	102.6	106.3	106.8
India	23.0	23.1	22.6	2.05	1.92	2.00	2.00	47.1	44.3	45.1	45.1
Iran	6.3	6.1	6.3	1.14	0.98	1.08	1.08	7.1	6.0	6.8	6.8
Mexico	1.1	0.9	0.8	4.19	4.11	4.00	4.00	4.5	3.7	3.2	3.2
Non-EC W. Europe	1.0	0.9	0.8	4.51	4.20	4.60	4.90	4.3	4.0	3.7	3.9
Pakistan	7.4	7.7	7.3	1.89	1.56	1.73	1.73	13.9	12.0	12.6	12.7
South Africa	1.9	1.7	2.0	1.21	1.81	1.73	1.73	2.3	3.1	3.4	3.4
Turkey	8.7	8.7	8.8	1.61	1.49	1.71	1.71	14.0	13.0	15.0	15.0
Others	10.1	9.3	9.5	1.64	1.77	1.75	1.76	16.5	16.4	16.5	16.8

\*/ Algeria, Libya, Morocco, and Tunisia.

APRIL 1989

FOREIGN PRODUCTION ESTIMATES DIVISION, FAS, USDA

Table 5

## Coarse Grains Area, Yield, and Production: World and Selected Countries and Regions

Country/Region	---Area---			---Yield---				---Production---			
	Prel. : 1986/87	Proj. 1987/88	Proj. 1988/89	Prel. 1986/87	1988/89 March	Proj. 1987/88 April	Prel. 1986/87	1988/89 March	Proj. 1987/88 April		
TOTAL COARSE GRAINS 1/	---Million Hectares---			---Metric Tons Per Hectare---				---Million Metric Tons---			
World	336.8	323.6	325.8	2.48	2.45	2.21	2.22	835.6	792.3	721.3	723.3
United States	41.5	35.4	32.8	6.09	6.10	4.57	4.57	252.8	215.9	149.6	149.6
Total Foreign	295.3	288.2	293.1	1.97	2.00	1.95	1.96	582.8	576.4	571.7	573.7
Maj. Foreign Exporters	23.7	23.4	21.6	2.44	2.41	2.30	2.35	57.9	56.3	50.8	50.9
Argentina	4.5	4.4	3.4	2.88	2.98	2.40	2.44	13.0	13.0	9.0	8.3
Australia	4.4	4.6	4.5	1.55	1.50	1.46	1.46	6.8	6.9	6.6	6.6
Canada	7.8	8.0	7.2	3.26	3.21	2.73	2.73	25.5	25.5	19.6	19.6
South Africa	4.9	4.5	4.6	1.61	1.75	2.31	2.52	7.9	7.9	10.8	11.7
Thailand	2.0	2.0	2.0	2.25	1.51	2.49	2.49	4.6	3.0	4.9	4.9
Major Importers	108.5	108.0	105.9	2.67	2.66	2.58	2.58	290.0	287.6	273.1	273.8
Eastern Europe	18.6	18.1	18.3	3.97	3.56	3.32	3.34	73.9	64.6	60.9	61.1
EC-12	19.8	19.0	19.3	4.13	4.34	4.59	4.61	81.7	82.4	88.7	89.0
Other W. Europe	3.4	3.1	3.2	3.63	3.47	3.36	3.46	12.3	10.9	10.8	11.2
Mexico	7.7	7.8	7.6	1.93	1.87	1.89	1.89	14.9	14.5	14.7	14.4
USSR	58.6	59.5	57.0	1.81	1.91	1.69	1.69	105.9	113.7	96.5	96.5
Other Major Import. 2/	0.4	0.5	0.5	3.04	3.12	3.40	3.40	1.3	1.4	1.5	1.5
Other Foreign	163.2	156.8	165.5	1.44	1.48	1.50	1.50	235.0	232.6	247.8	249.0
Brazil	14.0	13.6	13.5	1.95	1.87	1.76	1.83	27.3	25.4	23.6	24.7
China	27.9	28.7	27.9	3.12	3.36	3.30	3.30	87.0	96.5	91.8	91.8
India	39.6	36.3	39.7	0.67	0.65	0.82	0.82	26.6	23.5	32.6	32.6
Indonesia	3.0	2.8	2.8	1.64	1.71	1.79	1.79	5.0	4.8	5.0	5.0
Nigeria	10.2	9.4	10.1	0.84	0.72	0.84	0.84	8.6	6.8	8.5	8.5
Philippines	3.6	3.8	3.8	1.13	1.15	1.16	1.16	4.0	4.3	4.4	4.4
Turkey	4.3	4.3	4.4	2.19	2.17	2.18	2.18	9.4	9.3	9.5	9.5
Others	60.6	57.9	63.4	1.11	1.07	1.14	1.14	67.2	62.0	72.4	72.5
BARLEY											
World	80.1	79.5	76.4	2.28	2.27	2.16	2.16	182.4	180.7	165.1	165.3
United States	4.9	4.1	3.0	2.74	2.83	2.07	2.07	13.3	11.5	6.3	6.3
Total Foreign	75.2	75.4	73.4	2.25	2.24	2.16	2.17	169.1	169.1	158.8	159.0
Australia	2.3	2.4	2.3	1.56	1.46	1.43	1.43	3.6	3.5	3.3	3.3
Canada	4.8	5.0	4.1	3.03	2.79	2.44	2.44	14.6	14.0	10.1	10.1
China	3.4	3.4	3.3	1.68	1.78	1.92	1.92	5.6	6.0	6.3	6.3
Eastern Europe	4.5	4.3	4.4	3.77	3.80	3.63	3.63	16.9	16.3	15.8	15.8
EC-12	12.7	12.2	12.3	3.69	3.83	4.12	4.12	46.8	46.8	50.6	50.6
Other W. Europe	1.8	1.7	1.8	3.38	3.10	3.07	3.20	6.2	5.2	5.4	5.7
Turkey	3.2	3.2	3.3	1.97	1.88	1.97	1.97	6.3	6.0	6.5	6.5
USSR	30.0	30.7	28.9	1.80	1.91	1.54	1.54	53.9	58.4	44.5	44.5
Others	12.6	12.6	13.1	1.21	1.03	1.24	1.24	15.2	12.9	16.3	16.2

FOOTNOTES AT END OF TABLE

CONTINUED

Table 5 (Continued)

## Coarse Grains Area, Yield, and Production: World and Selected Countries and Regions (Continued)

Country/Region	---Area---			---Yield---				---Production---				
	Prel.	Proj.		Prel.	1988/89	Proj.	Prel.	1988/89	Proj.	Prel.	1988/89	
	1986/87	1987/88	1988/89	1986/87	1987/88	March	April	1986/87	1987/88	March	April	
CORN	---Million Hectares---				---Metric Tons Per Hectare---				---Million Metric Tons---			
World	129.4	125.0	125.2	3.69	3.58	3.13	3.15	477.4	447.1	391.9	394.5	
United States	28.0	24.0	23.5	7.49	7.50	5.31	5.31	209.6	179.6	125.0	125.0	
Total Foreign	101.4	101.1	101.6	2.64	2.65	2.62	2.65	267.9	267.5	266.9	269.5	
Maj. Foreign Exporters	8.7	8.0	7.4	2.37	2.36	2.63	2.81	20.7	18.8	20.0	20.8	
Argentina	2.9	2.6	1.9	3.19	3.46	2.62	2.79	9.3	9.0	5.5	5.3	
South Africa	4.0	3.6	3.8	1.78	1.95	2.63	2.89	7.2	7.1	10.0	11.0	
Thailand	1.8	1.8	1.7	2.37	1.56	2.65	2.65	4.3	2.7	4.5	4.5	
Major Importers	22.0	21.9	22.3	4.03	3.79	3.80	3.81	88.9	82.9	84.7	85.0	
Eastern Europe	7.6	7.3	7.4	5.13	4.11	3.81	3.81	38.9	30.0	28.0	28.0	
EC-12	3.9	3.7	4.0	6.47	7.02	7.07	7.13	25.2	26.0	28.3	28.6	
Other W. Europe	0.2	0.2	0.2	8.01	8.01	8.10	8.31	1.9	1.8	1.8	1.9	
Mexico	6.0	6.0	6.0	1.67	1.65	1.68	1.68	10.0	9.9	10.1	10.1	
USSR	4.2	4.6	4.6	2.96	3.24	3.48	3.48	12.5	14.8	16.0	16.0	
Other Maj. Import. 2/	0.1	0.1	0.1	3.91	4.11	4.15	4.12	0.4	0.4	0.5	0.4	
Other Foreign	70.6	71.2	71.9	2.24	2.33	2.26	2.28	158.3	165.7	162.3	163.6	
Brazil	13.5	13.2	13.0	1.96	1.88	1.77	1.85	26.5	24.7	23.0	24.0	
Canada	1.0	1.0	1.0	5.95	7.02	5.47	5.47	5.9	7.0	5.4	5.4	
China	19.1	20.2	19.7	3.71	3.95	3.81	3.81	70.9	79.8	75.0	75.0	
Egypt	0.8	0.8	0.8	4.73	5.14	5.00	4.97	3.9	4.2	4.1	4.1	
India	5.9	5.5	5.9	1.27	1.00	1.36	1.36	7.5	5.5	8.0	8.0	
Indonesia	3.0	2.8	2.8	1.64	1.71	1.79	1.79	5.0	4.8	5.0	5.0	
Philippines	3.6	3.8	3.8	1.13	1.15	1.16	1.16	4.0	4.3	4.4	4.4	
Zimbabwe	1.2	1.3	1.3	0.92	1.60	1.44	1.44	1.1	2.0	1.8	1.8	
Others	22.5	22.7	23.7	1.49	1.47	1.50	1.52	33.5	33.3	35.6	36.0	
SORGHUM												
World	46.1	41.9	44.5	1.41	1.34	1.28	1.27	64.8	56.0	57.5	56.6	
United States	5.6	4.3	3.7	4.25	4.38	4.00	4.00	23.8	18.8	14.7	14.7	
Total Foreign	40.5	37.6	40.9	1.01	0.99	1.04	1.03	40.9	37.2	42.9	42.0	
Argentina	1.0	1.0	0.8	3.10	3.00	2.74	2.63	3.1	3.0	2.6	2.1	
Australia	0.8	0.7	0.7	1.74	1.90	1.91	1.91	1.4	1.4	1.3	1.3	
China	1.9	1.9	1.8	2.87	2.91	2.96	2.96	5.4	5.4	5.3	5.3	
India	15.6	15.6	16.2	0.57	0.61	0.71	0.71	8.9	9.5	11.5	11.5	
Mexico	1.4	1.4	1.3	3.19	2.91	2.91	2.94	4.3	4.0	4.0	3.8	
Nigeria	4.5	4.3	4.4	0.80	0.67	0.80	0.80	3.6	2.9	3.5	3.5	
South Africa	0.3	0.3	0.3	1.53	1.52	1.77	1.58	0.5	0.5	0.6	0.4	
Sudan	4.8	3.0	5.5	0.71	0.43	0.69	0.69	3.4	1.3	3.8	3.8	
Thailand	0.2	0.2	0.3	1.26	1.10	1.40	1.40	0.3	0.2	0.4	0.4	
Others	9.9	9.2	9.7	1.02	0.98	1.02	1.02	10.1	9.0	10.0	9.9	

FOOTNOTES AT END OF TABLE

CONTINUED

Table 5 (Continued)

## Coarse Grains Area, Yield, and Production: World and Selected Countries and Regions (Continued)

Country/Region	---Area---			---Yield---				---Production---				
				Prel.	Proj.	Prel.	1988/89 Proj.	Prel.	1988/89 Proj.	Prel.	1988/89 Proj.	
	1986/87	1987/88	1988/89	1986/87	1987/88	March	April	1986/87	1987/88	March	April	
OATS	---Million Hectares---				---Metric Tons Per Hectare---				---Million Metric Tons---			
World	25.0	23.6	23.0	1.90	1.84	1.68	1.69	47.5	43.3	38.8	38.8	
United States	2.8	2.8	2.3	2.02	1.94	1.40	1.40	5.6	5.4	3.2	3.2	
Total Foreign	22.2	20.8	20.7	1.89	1.82	1.71	1.72	41.9	37.8	35.6	35.6	
USSR	13.2	11.8	11.5	1.66	1.57	1.43	1.43	21.9	18.5	16.5	16.5	
Maj. Foreign Exporters	3.3	3.5	3.7	2.05	1.97	1.81	1.80	6.7	6.8	6.7	6.6	
Argentina	0.4	0.5	0.4	1.00	1.30	1.25	1.25	0.4	0.7	0.5	0.5	
Australia	1.1	1.3	1.5	1.39	1.33	1.25	1.25	1.6	1.7	1.8	1.8	
Canada	1.3	1.3	1.4	2.53	2.37	2.10	2.10	3.3	3.0	3.0	3.0	
Sweden	0.5	0.4	0.4	3.26	3.63	3.25	3.14	1.5	1.4	1.4	1.3	
Other Foreign	5.8	5.5	5.5	2.30	2.27	2.21	2.25	13.2	12.5	12.4	12.5	
China	0.6	0.6	0.6	1.04	1.10	1.19	1.19	0.6	0.6	0.7	0.7	
Eastern Europe	1.5	1.4	1.4	2.75	2.80	2.52	2.61	4.2	4.0	3.7	3.7	
East Germany	0.2	0.1	0.2	4.09	4.28	3.30	3.30	0.7	0.6	0.5	0.5	
Poland	0.9	0.9	0.9	2.69	2.84	2.48	2.62	2.5	2.4	2.2	2.2	
EC-12	1.9	1.8	1.8	2.95	3.02	3.08	3.10	5.6	5.3	5.5	5.5	
France	0.3	0.3	0.3	3.27	3.91	3.86	3.86	1.0	1.0	1.0	1.0	
West Germany	0.6	0.6	0.6	4.44	4.30	4.23	4.23	2.7	2.4	2.4	2.4	
Finland	0.4	0.4	0.4	2.92	2.21	2.21	2.21	1.2	0.8	0.9	0.9	
Norway	0.1	0.1	0.1	3.15	3.87	2.98	2.98	0.4	0.5	0.4	0.4	
Others	1.2	1.3	1.3	1.04	1.03	1.02	1.04	1.3	1.3	1.3	1.3	
RYE												
World	14.8	15.9	15.3	2.10	2.14	2.02	2.03	31.0	34.0	30.8	31.0	
United States	0.3	0.3	0.2	1.81	1.82	1.55	1.55	0.5	0.5	0.4	0.4	
Total Foreign	14.5	15.6	15.0	2.10	2.15	2.03	2.04	30.5	33.5	30.5	30.6	
USSR	8.7	9.7	9.5	1.74	1.86	1.74	1.74	15.2	18.1	16.5	16.5	
Maj. Foreign Exporter												
Canada	0.3	0.3	0.2	1.93	1.58	1.05	1.05	0.6	0.5	0.3	0.3	
Other Foreign												
Eastern Europe	3.9	4.0	3.9	2.73	2.75	2.56	2.58	10.6	11.0	9.9	10.0	
East Germany	0.7	0.7	0.6	3.54	3.49	2.93	2.93	2.4	2.3	1.8	1.8	
Poland	2.8	3.0	2.9	2.57	2.65	2.47	2.51	7.3	7.8	7.1	7.2	
Czechoslovakia	0.2	0.2	0.2	3.49	3.13	3.42	3.42	0.5	0.5	0.5	0.5	
EC-12	1.0	1.0	0.9	3.02	2.91	3.14	3.11	3.0	3.0	2.9	2.9	
Denmark	0.1	0.1	0.1	4.55	3.77	4.58	4.58	0.5	0.5	0.4	0.4	
West Germany	0.4	0.4	0.4	4.28	3.89	4.19	4.19	1.8	1.6	1.6	1.6	
Others	0.5	0.5	0.5	1.83	1.82	1.94	2.03	1.0	1.0	0.9	1.0	

1/ Total of barley, corn, sorghum, oats, and rye shown below plus millet and mixed grain.

2/ Japan, Republic of Korea, and Taiwan.

Table 6

## Rice Area, Yield, and Production: World and Selected Countries and Regions

Country/Region	Area		Yield		Production (Rough Basis)		Milling Rate		Production (Milled Basis)		
	Prel.	Proj.	Prel.	Proj.	Prel.	1988/89 Proj.	Prel.	1988/89 Proj.	Prel.	1988/89 Proj.	
	1986/87	1987/88	1988/89	1986/87	1987/88	March April	1986/87	1987/88	March April	1986/87	1987/88
World	Million Hectares		Metric Tons Per Hectare		Million Metric Tons		In Percent		Million Metric Tons		
United States	1.0	0.9	1.2	6.33	6.23	6.17	6.0	5.9	7.2	7.2	7.0
Total Foreign	144.2	140.2	142.9	3.20	3.23	3.28	3.27	461.5	452.2	469.4	467.5
Maj. Foreign Exporters	16.4	16.0	16.7	2.17	2.09	2.36	2.23	35.6	33.4	39.5	37.4
Burma	4.7	4.4	4.8	2.47	2.43	2.92	2.55	11.5	10.8	14.0	12.2
Pakistan	2.1	2.0	1.9	2.53	2.48	2.55	2.40	5.2	4.9	5.0	4.7
Thailand	9.7	9.6	10.0	1.95	1.85	2.05	2.05	18.9	17.8	20.5	20.5
Major Importers	13.0	13.0	13.0	3.98	3.93	4.10	4.10	51.8	51.1	53.2	53.2
EC-12	0.3	0.3	0.3	5.76	5.78	5.55	5.59	1.9	1.9	1.9	1.9
Indonesia	9.9	9.9	9.8	3.94	3.92	4.05	4.05	39.0	38.7	39.7	39.7
Nigeria	0.7	0.6	0.6	1.43	1.31	1.43	1.43	0.9	0.8	0.9	0.9
Republic of Korea	1.2	1.3	1.3	6.37	6.02	6.64	6.64	7.9	7.6	8.4	8.4
Other Maj. Import. * /</td <td>0.9</td> <td>0.9</td> <td>1.0</td> <td>2.38</td> <td>2.33</td> <td>2.45</td> <td>2.45</td> <td>2.1</td> <td>2.1</td> <td>2.3</td> <td>2.3</td>	0.9	0.9	1.0	2.38	2.33	2.45	2.45	2.1	2.1	2.3	2.3
Other Foreign	114.8	111.2	113.2	3.26	3.31	3.33	3.33	374.1	367.7	376.7	377.0
Australia	0.1	0.1	0.1	5.72	7.16	6.99	6.99	0.5	0.8	0.7	0.7
Bangladesh	10.6	10.3	9.5	2.18	2.24	2.43	2.43	23.1	23.1	23.1	23.1
Brazil	6.0	6.0	5.5	1.74	1.98	1.84	1.94	10.4	11.8	10.1	10.7
China	32.3	32.2	31.9	5.34	5.42	5.37	5.37	172.2	174.4	171.0	171.0
India	40.8	38.3	41.5	2.22	2.21	2.35	2.35	90.6	84.6	97.5	97.5
Japan	2.3	2.1	2.1	6.32	6.19	5.83	5.82	14.6	13.3	12.4	12.4
Philippines	3.4	3.3	3.4	2.64	2.65	2.67	2.67	9.0	8.7	9.0	9.0
USSR	0.6	0.7	0.7	4.24	4.13	4.46	4.46	2.6	2.7	2.9	2.9
Vietnam	5.7	5.6	5.8	2.81	2.74	2.83	2.83	16.0	15.3	16.3	16.3
Others	13.0	12.6	12.8	2.68	2.61	2.61	2.61	35.0	33.1	33.6	33.4

\*/ Hong Kong, Iran, Iraq, Ivory Coast, and Saudi Arabia.

APRIL 1989

FOREIGN PRODUCTION ESTIMATES DIVISION, FAS, USDA

Table 7

## Oilseeds Area, Yield, and Production: World and Selected Countries and Regions

Country/Region	---Area---			---Yield---				---Production---				
	Prel.	Proj.		Prel.	1988/89	Proj.	Prel.	1988/89	Proj.			
	1986/87	1987/88	1988/89	1986/87	1987/88	March April	1986/87	1987/88	March April			
	---Million Hectares---			---Metric Tons Per Hectare---				---Million Metric Tons---				
SOYBEANS												
World	51.48	53.90	55.78	1.90	1.91	1.67	1.67	97.92	103.17	93.41	93.13	
United States	23.59	23.06	23.22	2.24	2.27	1.80	1.80	52.80	52.33	41.88	41.88	
Total Foreign	27.89	30.84	32.56	1.62	1.65	1.58	1.57	45.12	50.84	51.53	51.25	
Maj. Foreign Exporters	12.78	14.78	16.40	1.90	1.89	1.79	1.79	24.30	27.95	29.50	29.30	
Argentina	3.51	4.26	4.60	1.99	2.32	1.81	1.80	7.00	9.90	8.50	8.30	
Brazil	9.27	10.52	11.80	1.87	1.72	1.78	1.78	17.30	18.05	21.00	21.00	
Other Foreign	15.11	16.07	16.16	1.38	1.42	1.36	1.36	20.82	22.89	22.03	21.95	
Canada	0.38	0.46	0.54	2.50	2.76	2.15	2.15	0.96	1.27	1.15	1.15	
China	8.30	8.45	8.14	1.40	1.44	1.35	1.35	11.61	12.18	11.00	11.00	
Eastern Europe	0.48	0.53	0.57	1.66	1.31	1.27	1.27	0.81	0.69	0.72	0.72	
India	1.39	1.40	1.70	0.60	0.57	0.76	0.76	0.84	0.80	1.30	1.30	
Indonesia	0.92	0.95	1.00	0.98	1.00	1.00	1.00	0.90	0.95	1.00	1.00	
Mexico	0.34	0.39	0.15	1.94	1.92	2.07	2.07	0.66	0.75	0.30	0.30	
Paraguay	0.53	0.62	0.69	1.79	1.79	1.74	1.74	0.95	1.10	1.20	1.20	
USSR	0.75	0.78	0.80	0.94	0.91	0.91	0.91	0.70	0.71	0.73	0.73	
Others	2.02	2.50	2.58	1.68	1.78	1.79	1.76	3.39	4.43	4.63	4.55	
COTTONSEED												
World	29.91	32.40	34.16	0.91	0.96	0.94	0.94	27.13	31.05	32.29	32.24	
United States	3.43	4.06	4.81	1.01	1.29	1.14	1.14	3.45	5.23	5.49	5.49	
Total Foreign	26.49	28.34	29.35	0.89	0.91	0.91	0.91	23.68	25.82	26.80	26.75	
China	4.31	4.84	5.58	1.40	1.49	1.28	1.28	6.02	7.22	7.14	7.14	
India	7.28	7.40	7.70	0.44	0.42	0.46	0.46	3.22	3.09	3.55	3.55	
Pakistan	2.51	2.57	2.44	1.05	1.15	1.20	1.19	2.64	2.95	2.93	2.90	
USSR	3.48	3.53	3.45	1.40	1.27	1.45	1.45	4.87	4.49	5.02	5.02	
Others	8.92	10.00	10.18	0.78	0.81	0.80	0.80	6.93	8.08	8.15	8.13	
PEANUTS												
World	18.36	17.52	18.72	1.11	1.13	1.16	1.15	20.44	19.72	21.70	21.56	
United States	0.62	0.63	0.66	2.70	2.62	2.78	2.74	1.68	1.64	1.82	1.81	
Total Foreign	17.74	16.89	18.06	1.06	1.07	1.10	1.09	18.76	18.08	19.88	19.76	
Brazil	0.14	0.10	0.09	1.37	1.67	1.56	1.56	0.20	0.17	0.14	0.14	
China	3.25	3.02	2.91	1.81	2.04	1.99	1.99	5.88	6.17	5.80	5.80	
India	7.15	6.20	7.50	0.85	0.77	0.97	0.97	6.06	4.80	7.30	7.30	
Senegal	0.81	0.85	0.90	1.01	1.10	0.76	0.76	0.82	0.93	0.69	0.69	
South Africa	0.16	0.21	0.22	0.73	1.00	1.00	1.00	0.12	0.21	0.22	0.22	
Sudan	0.52	0.55	0.55	0.87	0.73	0.73	0.73	0.45	0.40	0.40	0.40	
Others	5.71	5.96	5.88	0.92	0.91	0.90	0.89	5.24	5.40	5.33	5.21	

CONTINUED

Table 7 (Continued)

Oilseeds Area, Yield, and Production: World and Selected Countries and Regions (Continued)

Country/Region	---Area---			---Yield---				---Production---				
	Prel. Proj.			1988/89 Proj.				Prel. 1988/89 Proj.				
	1986/87	1987/88	1988/89	1986/87	1987/88	March April	1986/87	1987/88	March April			
---Million Hectares---				---Metric Tons Per Hectare---				---Million Metric Tons---				
SUNFLOWERSEED												
World	14.12	14.98	15.19	: 1.36	1.37	1.38	1.38	: 19.25	20.51	20.86	20.96	
United States	0.79	0.72	0.81	: 1.53	1.65	1.01	1.04	: 1.21	1.18	0.74	0.85	
Total Foreign	13.32	14.26	14.38	: 1.35	1.36	1.40	1.40	: 18.04	19.33	20.12	20.12	
Argentina	1.80	2.06	2.20	: 1.39	1.36	1.25	1.25	: 2.50	2.80	2.75	2.75	
China	1.11	0.89	0.94	: 1.39	1.40	1.43	1.43	: 1.54	1.24	1.34	1.34	
EC-12	2.15	2.32	2.08	: 1.53	1.70	1.97	1.98	: 3.28	3.93	4.10	4.10	
East Europe	1.33	1.38	1.34	: 2.15	1.73	1.78	1.78	: 2.86	2.38	2.37	2.37	
USSR	3.85	4.16	4.25	: 1.37	1.46	1.46	1.46	: 5.26	6.08	6.20	6.20	
Others	3.09	3.47	3.58	: 0.84	0.84	0.94	0.94	: 2.60	2.91	3.36	3.35	
RAPESEED												
World	14.59	16.17	17.08	: 1.33	1.42	1.26	1.27	: 19.46	22.97	21.19	21.72	
Total Foreign	14.59	16.17	17.08	: 1.33	1.42	1.26	1.27	: 19.46	22.97	21.19	21.72	
Canada	2.64	2.67	3.65	: 1.43	1.44	1.16	1.16	: 3.79	3.85	4.24	4.24	
China	4.92	5.27	4.93	: 1.20	1.25	1.02	1.02	: 5.88	6.61	5.04	5.04	
EC-12	1.27	1.86	1.86	: 2.91	3.20	2.86	2.86	: 3.69	5.95	5.31	5.31	
East Europe	0.96	0.92	0.88	: 2.38	2.34	2.44	2.47	: 2.28	2.16	2.15	2.18	
India	3.73	4.10	4.30	: 0.71	0.76	0.75	0.81	: 2.64	3.10	3.00	3.50	
Others	1.08	1.34	1.46	: 1.10	0.97	0.99	0.99	: 1.19	1.31	1.44	1.45	
FLAXSEED												
World	4.33	4.17	4.02	: 0.62	0.55	0.44	0.44	: 2.69	2.28	1.75	1.75	
United States	0.28	0.19	0.09	: 1.06	1.01	0.45	0.45	: 0.29	0.19	0.04	0.04	
Total Foreign	4.05	3.98	3.93	: 0.59	0.52	0.44	0.44	: 2.40	2.09	1.71	1.71	
Argentina	0.75	0.69	0.55	: 0.83	0.80	0.82	0.82	: 0.62	0.55	0.45	0.45	
Canada	0.76	0.59	0.55	: 1.36	1.23	0.76	0.76	: 1.03	0.73	0.41	0.41	
India	1.23	1.35	1.35	: 0.28	0.30	0.30	0.30	: 0.34	0.40	0.40	0.40	
USSR	1.05	1.07	1.20	: 0.22	0.21	0.22	0.22	: 0.23	0.23	0.26	0.26	
Others	0.28	0.28	0.28	: 0.63	0.65	0.66	0.66	: 0.17	0.18	0.19	0.19	
MAJOR OILSEEDS TOTAL	132.78	139.13	144.94	: 1.41	1.44	1.32	1.32	: 186.89	199.70	191.19	191.36	
COPRA	--	--	--	--	--	--	--	: 4.72	4.24	4.56	4.56	
PALM KERNEL	--	--	--	--	--	--	--	: 2.60	2.67	2.86	2.89	
TOTAL OILSEEDS	--	--	--	--	--	--	--	: 194.21	206.61	198.61	198.81	
PALM OIL *	--	--	--	--	--	--	--	: 8.09	8.53	9.36	9.36	

Table 8

## Cotton Area, Yield, and Production: World and Selected Countries and Regions

Country/Region	---Area---			---Yield---				---Production---			
	Prel. Proj.			1988/89 Proj.				1988/89 Proj.			
	1986/87	1987/88	1988/89	1986/87	1987/88	March April	1986/87	1987/88	March April		
	---Million Hectares---			---Kilograms Per Hectare---				---Million 480-Pound Bales---			
World	29.9	32.2	34.2	513	545	536	536	70.4	80.6	84.4	84.3
United States	3.4	4.1	4.8	618	791	699	699	9.7	14.8	15.4	15.4
Total Foreign	26.5	28.2	29.4	499	509	510	509	60.7	65.9	68.9	68.8
Maj. Foreign Exporters	12.1	12.8	13.4	749	763	754	753	41.5	45.0	46.5	46.5
Australia	0.1	0.2	0.2	1446	1190	1338	1338	1.0	1.3	1.1	1.1
Central America 1/	0.1	0.1	0.1	814	811	862	862	0.4	0.4	0.4	0.4
China	4.3	4.8	5.6	824	876	753	753	16.3	19.5	19.3	19.3
Egypt	0.4	0.4	0.4	909	845	752	717	1.9	1.6	1.5	1.4
Mexico	0.2	0.2	0.3	926	956	1110	1110	0.6	1.0	1.3	1.3
Pakistan	2.5	2.6	2.4	527	573	593	593	6.1	6.8	6.7	6.7
Sudan	0.4	0.3	0.3	468	416	435	435	0.8	0.6	0.6	0.6
Turkey	0.6	0.6	0.7	880	916	924	924	2.4	2.5	3.0	3.0
USSR	3.5	3.5	3.5	762	700	801	801	12.2	11.3	12.7	12.7
Major Importers 2/	0.3	0.3	0.4	930	828	837	837	1.4	1.2	1.6	1.6
Other Foreign	14.1	15.0	15.6	275	285	291	290	17.8	19.6	20.8	20.8
Argentina	0.3	0.5	0.5	318	547	374	361	0.5	1.3	0.9	0.8
Brazil	2.2	2.3	2.3	303	327	314	314	3.0	3.5	3.3	3.3
India	7.3	7.4	7.7	222	209	232	232	7.4	7.1	8.2	8.2
Syria	0.1	0.1	0.2	874	835	910	783	0.6	0.5	0.7	0.6
Others	4.2	4.6	4.9	328	341	342	345	6.3	7.2	7.7	7.8

1/ Nicaragua, Guatemala, El Salvador, Honduras, and Costa Rica.

2/ Western Europe, Eastern Europe, Japan, Hong Kong, Republic of Korea, and Taiwan.

Table 9

NOTE: The table below presents a 7-year record of the difference between the April projections and the final estimates. Using world wheat production as an example, changes between April projections and the final estimates have averaged 3.1 million tons (0.7 percent) and ranged from -6.8 to 6.5 million tons. The April projection has been below the final three times and above the final 4 times.

## RELIABILITY OF PRODUCTION PROJECTIONS

COMMODITY AND REGION	PROJECTION AND FINAL ESTIMATES, 1981/82 - 1987/88 1/						
	-----		Lowest -- Highest		Below Final	Above Final	
	Average	Average	Difference	Final			
	Percent	---	Metric Tons---		Number of Years 2/		
WHEAT	:	:			:		
World	:	0.7	:	3.1	:	-6.8	6.5
U.S.	:	0.1	:	0.0	:	-0.1	0.1
Foreign	:	0.8	:	3.2	:	-6.8	6.5
:	:	:	:	:	:		
COARSE GRAINS 3/	:	:	:		:		
World	:	0.5	:	3.7	:	-7.1	4.3
U.S.	:	0.2	:	0.2	:	-0.1	1.3
Foreign	:	0.7	:	3.8	:	-7.1	4.3
:	:	:	:		:		
RICE (Milled)	:	:	:		:		
World	:	1.3	:	4.0	:	-9.0	1.3
U.S.	:	0.4	:	0.0	:	0.0	0.1
Foreign	:	1.3	:	4.0	:	-9.0	1.3
:	:	:	:		:		
SOYBEANS	:	:	:		:		
World	:	1.7	:	1.6	:	-2.5	1.7
U.S.	:	1.5	:	0.8	:	-1.1	1.8
Foreign	:	2.3	:	0.9	:	-2.2	0.0
:	:	:	:		:		
COTTON	:	:	---	Million 480-lb. Bales---	:		
World	:	1.1	:	0.9	:	-3.0	0.1
U.S.	:	0.1	:	0.0	:	0.0	0.1
Foreign	:	1.4	:	0.9	:	-3.0	0.1
:	:	:	:		:		
<u>UNITED STATES</u>	:	-----Million Bushels-----					:
:	:						
CORN	:	0.1	:	5.0	:	0.0	38.0
SORGHUM	:	0.1	:	1.0	:	0.0	4.0
BARLEY	:	0.5	:	2.0	:	-3.0	11.0
OATS	:	0.1	:	0.0	:	-2.0	0.0
:	:	:	:		:		

1/ The final estimate for 1981/82-1986/87 is defined as the November estimate following the marketing year and for 1987/88 last month's estimate.

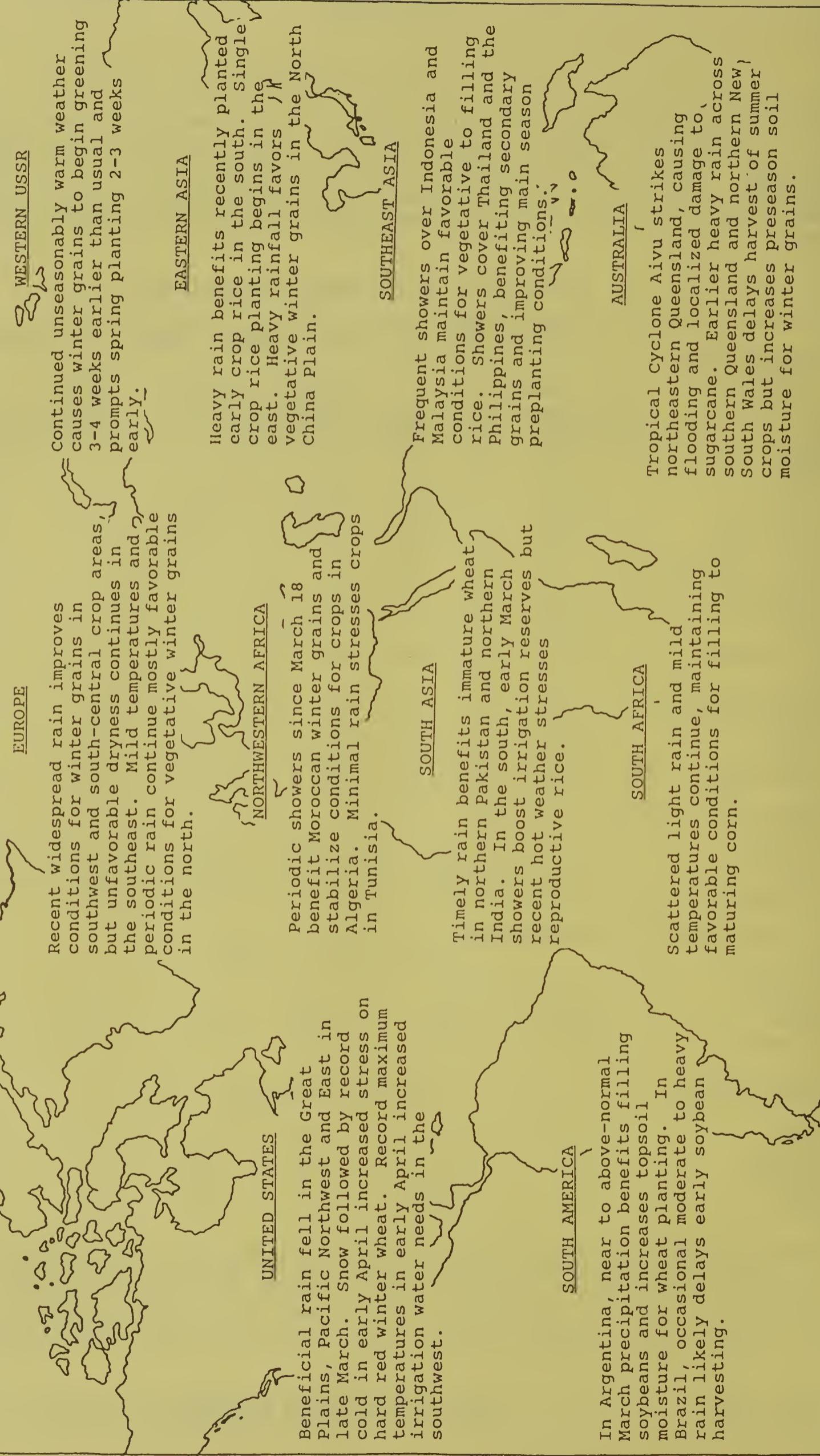
2/ May not total seven if projection was the same as the final estimate.

3/ Includes corn, sorghum, barley, oats, rye, millet, and mixed grain.

## WORLD AGRICULTURAL WEATHER HIGHLIGHTS

Date April 11, 1989

NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY



## WEATHER BRIEFS

### DROUGHT UPDATE FOR MEDITERRANEAN BASIN

The persistent dryness in some parts of southern Europe and northwestern Africa was recently eased by substantial rainfall. Far northern Spain, southwestern France, northern Italy, and most of Morocco received near to above normal rainfall during March and early April. Widespread but mostly light rainfall occurred in the remainder of southern and southeastern Europe and northwestern Africa, while the Near East remained virtually dry. Southeastern Spain and some areas in southeast Europe have received near normal precipitation since autumn. Seasonal accumulations in the rest of the region remain below to much below normal despite recent rains, especially interior Spain, peninsular Italy, much of southeast Europe, Tunisia, and most of the Near East. Topsoil moisture levels in these European areas appear adequate for the current moisture demands of vegetative winter crops. Tunisia and the Near East appear too dry for normal winter crop development. Subsoil moisture reserves in most of the region seem limited at a time when the moisture demands of winter crops are increasing. Surface reservoirs are also probably below normal pool levels, suggesting irrigation supplies and hydro-electric power generation potential may be limited next summer. The probability of significant improvements in the region's water supplies is diminishing now that the region's winter rainy season is drawing to a close.

### RAINY IN THE SOUTH AND CENTER-SOUTH OF BRAZIL

Late March and early April were unfavorably rainy in much of Brazil's south and center-south. The Brazilian states of Mato Grosso do Sul, Sao Paulo, Parana, Santa Catarina, and Rio Grande do Sul experienced several weeks of wet weather. This wetness probably hampered early soybean harvest in many areas and may have caused local field flooding. Drier weather will be needed in April and May to maintain yield and quality potentials of summer crops in harvest. More moderate rainfall would also facilitate winter crop planting during the next few months.

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## PRODUCTION BRIEFS

### BRAZIL: WHEAT PLANTING INTENTIONS FOR 1989/90 UNCERTAIN

In Brazil, wheat is planted from April through July and harvested from August through November. Nearly one hundred percent of production is double-cropped with soybeans. Initially, soybean producers grew wheat to supplement their income when soybean prices were low. However, in 1985 the Brazilian government began to provide production incentives to wheat producers in an effort to reach national self-sufficiency. The ensuing programs included technical assistance, favorable guaranteed prices, adequate credit, and an assured market. The Bank of Brazil Wheat Department (CTRIN) is the sole purchaser of wheat in Brazil. The change in policy resulted in a 150-percent increase in production from 1985 to 1987, as soybeans and wheat were more consistently double-cropped. The program also encouraged higher input usage and improved farming techniques, resulting in increased yields. Recently, the government has had difficulty in maintaining the program because of the debt crisis. In 1988, the government lowered the credit and price guarantees in an effort to minimize credit spending and reduce national production. This proved unsuccessful, as producers turned to personal resources and 1988 production nearly reached 1987 levels. The CTRIN was again faced with large purchasing and storage costs. The government's reluctance to spend resources on wheat was further demonstrated this year when the treasury was very slow in issuing funds to purchase the final 300,000 tons of 1988 crop wheat. The CTRIN was unable to finalize purchases until early April.

For 1989, the policy intentions of the government are unknown. The entire program is being reviewed, with the intent to privatize the domestic wheat marketing system. However, privatization will probably not be initiated until 1990. In the meantime, the government has not announced a program for the 1989 crop and producers are concerned that there will be no credit or guaranteed purchases. Given the policy uncertainties and expectations of continued high prices for soybeans, some producers may forego planting wheat ahead of the 1990 soybean crop. Wheat area is expected to decline, but to what extent is still unknown.

### PERU: PRODUCTION DECLINES FORECAST FOR POULTRY INDUSTRY

Production of both poultry and eggs in Peru is forecast to drop sharply (perhaps by 30 percent) in 1989 according to the U.S. agricultural attache in Lima. Prices for meat, eggs, and feed ingredients were decontrolled in December 1988, but current conditions in the national economy indicate demand for poultry products will continue to fall as it did last year. Peruvian 1988 poultry meat production was estimated at 250,000 tons, down slightly from 1987, as demand fell during second half of 1988. Despite demand problems, egg production was up in 1988 as producers recovered from 1987 losses due to outbreaks of poultry typhoid.

BRAZIL: SOYBEAN HARVESTED DELAYED BY EXCESS RAIN

The U.S. agricultural officer in Sao Paulo reports that about 6 to 8 percent of the total Brazilian soybean crop was harvested by April 1 compared with the usual 20 percent or more by this date. Late plantings and excess rains in March in some areas are the reasons for the delayed harvest. Overall growing conditions in March were considered favorable. Weather conditions continue to will be important in April due to late plantings. About 18 percent of the crop has been harvested in Parana. According to producer and trade sources, early yields in Parana are below average (about 1.9 tons per hectare), but still better than expected. About 5 percent of the Rio Grande do Sul crop has been harvested. Dry weather in minor growing areas of southern and western Rio Grande do Sul has caused some soybean yield losses.

BRAZIL: PROCESSING TOMATO PRODUCTION MOVING TO NORTHEAST

Production and processing of tomatoes in Brazil is showing a tendency to shift towards the northeastern regions of the country according to a report from the U.S. agricultural officer in Sao Paulo. The shift is due to better tomato quality, fewer disease problems, and less competition from other crops in the northeast. Current national processing capacity is estimated at 1.8 million tons, while 1989 production of processing tomatoes is forecast at 1 million tons. The states of Pernambuco and Bahia are expected to account for half of national production while Sao Paulo accounts for just over one-third.

**UNITED STATES: PROSPECTIVE PLANTING RESULTS RELEASED**

The National Agricultural Statistics Service reported in the March 31, 1989, Prospective Plantings report that the intended oilseeds area (soybeans, cotton, peanuts, sunflower, and flaxseed) is expected to total 31.1 million hectares, up 2 percent from last year. Area planted to food grains (wheat, rice, and rye) at 32.1 million hectares is up 12 percent from 1988. The intended 1989 feed grains acreage (corn, oats, barley, and sorghum) of 43.7 million hectares is up 6 percent from last year.

**UNITED STATES CROP SUMMARY  
AREA PLANTED AND 1989 INTENTIONS  
(MILLION HECTARES)**

CROP		1987	1988	1989 1/	1988-89 PERCENT CHANGE
CORN	:	26.590	27.365	29.645	8.3
SORGHUM	:	4.777	4.192	4.787	14.2
OATS	:	7.268	5.636	5.349	-5.1
BARLEY	:	4.470	3.916	3.893	-0.6
ALL WHEAT	:	26.642	26.519	30.062	13.4
WINTER	:	19.753	19.749	22.149	12.2
DURUM	:	1.352	1.350	1.560	15.6
OTHER SPRING	:	5.537	5.420	6.353	17.2
RICE	:	0.953	1.185	1.158	-2.3
SOYBEANS	:	23.454	23.824	24.977	4.8
FLAXSEED	:	0.190	0.111	0.117	5.5
PEANUTS	:	0.634	0.667	0.663	-0.6
SUNFLOWER	:	0.730	0.865	0.839	-3.0
ALL COTTON	:	4.212	5.058	4.470	-11.6
UPLAND	:	4.156	4.982	4.352	-12.6
AMER-PIMA	:	0.056	0.076	0.118	55.3
HAY 2/	:	24.584	26.531	25.520	-3.8
DRY EDIBLE BEANS	:	0.729	0.606	0.676	11.4
SWEETPOTATOES	:	0.039	0.037	0.038	1.5
TOBACCO 2/	:	0.238	0.256	0.289	12.9
SUGARBEETS	:	0.513	0.537	0.537	0.0

1/ Intended plantings in 1989 as indicated by reports from farmers.

2/ Area harvested for 1987 and 1988.

CANADA: STATISTICS CANADA RELEASES PLANTING INTENTIONS REPORT

The Statistics Canada planting intentions report for principal field crops, released on March 22, indicates that farmers are planning to shift area out of rapeseed and summerfallow into the major grains and flaxseed.

Total wheat area is expected to increase 0.5 million hectares from last year to 13.5 million; about half of that increase would be due to greater durum plantings. Barley area is expected to increase to 5.0 million hectares, up 13 percent from last year, but still below 1987/88 plantings. The area sown to rapeseed is expected to fall by almost 20 percent, to 3.0 million hectares. Oat, rye, corn, flaxseed, and soybean seedings are all expected to increase.

Despite generally good weather conditions throughout the prairie provinces this winter, some parts of Saskatchewan and southern Alberta are still very short of soil moisture. Farmers in these areas are likely to delay plantings until late in the planting season, which runs through May for wheat and into June for barley. Several factors may still affect planting decisions. The largest factor will likely be the Canadian Wheat Board's announcement of initial payments to farmers, which are expected to come out in mid-April. In addition, western farmers can be expected to watch the progress of the U.S. hard red winter wheat crop for indications of future market conditions.

## FEATURE COMMODITY ARTICLES

### WORLD PULSE SITUATION

The production estimate of dry pulses in selected major producing countries is up 15 percent in 1988 over the previous year, and up 23 percent since 1984. Output of dry beans, dry peas, lentils, and garbanzos (chickpeas) all reached record levels. The large increases in the area planted to pulses in the past 5 years have come from a relatively small group of countries, mostly in the Northern Hemisphere. The increases in each of these countries has been driven by low world grain prices and/or high government support prices for feed pulses.

The harvested area for dry beans (including broad beans) has increased by only 3 percent in the past 5 years, but production has risen by 9 percent. Increased production can be attributed primarily to increased yields in the EC-12, which have improved by 50 percent from an average of 1.2 tons per hectare in 1984 to 1.8 tons per hectare in 1988.

Dry pea production has risen 3.6 million tons, accounting for about half of the total increase in pulse production. Production in 1988 was 40 percent higher than in 1984, while harvested area increased 17 percent during the same period. Canadian area quadrupled, and area in both Australia and the EC-12 increased by about three and a half times.

Both area and production of garbanzos have been susceptible to large year to year changes. Production in India accounts for most of the total, and both area and yield have varied significantly with changes in weather patterns and relative crop prices. Turkey, the second largest producer of garbanzos, has expanded area rapidly, and now produces about 10 percent of the world total.

Lentil production has expanded rapidly in Canada, Turkey, and Syria. Canadian production was eight times greater in 1987 than in 1984, but harvested area and yields both dropped precipitously in 1988 due to severe drought conditions in the prairies. As a result, world area and production both declined slightly in 1988. The following is a summary of pulse production in those countries which showed the most significant increases in the past 5 years and in selected other major producers.

CANADA: From 1984 to 1988, the area planted to field peas and lentils tripled as western farmers looked for alternatives to traditional grains. The decline in lentil area and the concurrent drop in yields during the 1988 season were due to low prices and a prolonged drought in Saskatchewan, where 85-90 percent of the lentils and about 60 percent of the peas are normally grown. Higher wheat prices will probably lead to lower pea and lentil area in 1989, but no significant changes are expected for dry bean plantings.

EC-12: The largest increases in EC-12 pulse production since 1984 are due to a phenomenal increase in the area planted to field peas in France, Denmark, and the United Kingdom. The growth in area is attributed to a scheme introduced in 1978 which provides a subsidy to livestock feed compounders who use pulses instead of imported oilcake. In turn, compounders are required to pay EC farmers a "minimum price" for feed pulses. Minimum prices rose to a

high of 291.90 ECU's per ton in 1983/84, were reduced slightly for the next 3 years, and then were reduced another 10 percent in 1987/88 to 257.70 ECU's. These reductions were less significant for the more efficient producers in France, but area dropped in Denmark, West Germany, and the United Kingdom in 1988. Prices were reduced another 10 percent last year due to the effects of a stabilizer package. In 1989, a small increase in area is expected for both France and Germany despite lower minimum prices.

Bean production also has grown significantly in the past 5 years, largely due to a shift from the less efficient southern countries to West Germany, the Netherlands, and the United Kingdom. This signals a shift from beans for food use to beans for use in feed formulas. Winter bean plantings for 1989 have declined significantly in the United Kingdom, and a further decrease is expected in the Netherlands. Production of lentils and garbanzos is expected to remain relatively stable in the EC-12, with the exception of Spain, where a reduction in import levies has reduced domestic prices for beans, peas, lentils, and garbanzos.

AUSTRALIA: Production of pulses in Australia expanded rapidly in the 1980's, allowing them to become a major exporter of both lupines and field peas. Lupine production in 1989 is estimated at about 1.0 million tons, grown on over 900,000 hectares. Most of the production comes from the southwest corner of Western Australia. Field pea production is located predominately in Victoria and South Australia, but area also is expanding rapidly in Western Australia and New South Wales. Pea production is expected to remain stable or increase slightly in 1989.

TURKEY: Production of both garbanzos and lentils have increased rapidly in the past 5 years due to high support prices and an import levy of about US\$130-150 per ton.

SYRIA: Production of garbanzos and lentils increased in 1988 in response to large increases in government procurement prices. The larger increase in lentil production relative to garbanzos can be attributed to a restriction on the transport of lentils from the area of production. This regulation kept producers from selling to outside markets, so the increased support price was relatively more attractive. No such restriction applies to garbanzos.

INDIA: India is the largest producer of pulses in the world, but it has now become a net importer because production has remained static for the past few decades. Consumption is almost entirely for food use, and dry pulses are somewhat interchangeable, although preferences vary by region. Weather plays an important role in both area and yield, and 1988 production is expected to improve markedly compared to the past 2 years due to very favorable rainfall patterns. In addition, an increase in the import duty on pulses was raised from 10 percent to 35 percent in late 1988, resulting in a sharp increase in the domestic price of some pulses.

CHINA: Total pulse production is estimated at 3.9 million tons from 2.7 million hectares in 1986, of which bean production is placed at about 2.7 million tons from 1.9 million hectares. Some decline in area during recent years is evident for most pulses, but green bean area has expanded in the last 2 years due to the introduction of a high yield variety.

MEXICO: Changes in bean area are driven by both producer support prices and weather. Over 75 percent of the total annual bean area is rainfed, so yields vary considerably with weather conditions. Beans are grown throughout the country, but in 1988 the states of Zackets, Durango, and Chihuahua produced 65 percent of the summer and fall crop and the states of Sinaloa and Nayarit each produced about a quarter of the spring crop. The summer crop area varies little from year to year, but producer prices have a larger impact on spring bean area in Sinaloa because most of the area is irrigated and farmers have the potential to grow a wider variety of crops.

ARGENTINA: Planted area for beans dropped significantly in 1988, and is expected to drop for the third year in a row due to low world prices and early drought conditions in Salta Province, where over 60 percent of the beans are usually produced. Red beans and the Alubia type generally comprise over 90 percent of the total crop, but the mix is erratic and highly dependent on price levels. Peas and lentil plantings also are likely to decrease in 1989 due to lower world price levels. The Government of Argentina sets no specific policy or price incentive for pulses.

BRAZIL: After a large increase in planted area last year, 1989 bean plantings are expected to decline to about 5.5 million hectares. The decrease is attributed to drought conditions in the central-south region during late 1988 and to increased soybean area. This region produces two crops annually, with the dry season crop (February-August) comprising about 40-45 percent of Brazil's annual production. Total planted area in the north-northeast region is generally about the same as in the central-south, but yields are only about half as high. Third crops also are planted in some areas. Colored beans make up the bulk of production, with black beans making up the remaining 400-500,000 tons annually.

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Table 10

## DRY PEA AREA AND PRODUCTION FOR SELECTED COUNTRIES

	Harvested Area in Thousand Hectares					Production in Thousand Metric Tons				
	1984	1985	1986	1987	1988	1984	1985	1986	1987	1988
<b>AFRICA</b>										
Algeria	17	17	18	18	16	6	7	5	4	4
Egypt	4	2	3	3	3	6	3	6	6	6
Morocco	57	57	50	45	46	28	48	42	22	39
<b>ASIA</b>										
India	444	494	472	464	500	364	422	383	405	400
Japan	1	1	1	1	1	2	2	2	2	2
Pakistan	145	141	143	138	145	69	68	69	67	70
Turkey	2	2	2	2	2	4	4	4	4	4
<b>EC-12</b>										
Belgium/Lux	1	1	2	4	2	2	2	8	13	10
Denmark	34	100	120	200	144	255	525	509	507	556
France	128	197	274	414	473	620	920	1,108	1,720	2,379
Germany, FDR	2	16	39	51	29	7	50	120	147	103
Italy	3	3	3	3	3	5	5	5	4	4
Netherlands	11	20	22	35	28	56	71	124	122	114
Spain	3	3	2	2	1	3	3	2	2	1
U.K.	39	78	77	99	90	161	213	282	263	287
<b>NORTH AMERICA</b>										
Canada	75	80	131	253	297	130	181	236	442	357
U.S.	45	45	72	65	72	113	113	145	154	175
<b>OCEANIA</b>										
Australia	141	208	317	433	513	64	241	518	485	533
New Zealand	22	22	27	37	28	76	76	65	106	70
<b>SOUTH AMERICA</b>										
Argentina	8	10	8	18	25	8	13	11	15	24
Chile	6	8	6	6	6	6	8	5	5	5
Dom. Rep.	30	30	30	30	30	19	16	15	17	17
Ecuador	0	11	22	25	20	0	5	6	6	6
Paraguay	4	5	5	5	5	4	5	5	5	5
<b>USSR</b>	<b>5,434</b>	<b>5,337</b>	<b>5,457</b>	<b>5,500</b>	<b>5,340</b>	<b>7,000</b>	<b>7,200</b>	<b>6,296</b>	<b>7,000</b>	<b>7,500</b>
<b>TOTAL</b>	<b>6,656</b>	<b>6,888</b>	<b>7,303</b>	<b>7,851</b>	<b>7,819</b>	<b>9,008</b>	<b>10,201</b>	<b>9,971</b>	<b>11,523</b>	<b>12,671</b>

Table 11

## DRY BEAN AREA AND PRODUCTION FOR SELECTED COUNTRIES

	Harvested Area in Thousand Hectares					Production in Thousand Metric Tons					
	1984	1985	1986	1987	1988	1984	1985	1986	1987	1988	
AFRICA											
Algeria	72	73	69	68	67	32	41	33	31	31	
Egypt	129	142	113	120	152	271	302	282	323	362	
Kenya	391	480	502	510	520	136	177	325	164	315	
Morocco	190	212	196	211	207	122	195	215	127	232	
South Africa	47	56	54	60	62	69	77	58	72	75	
ASIA											
India	15,000	15,028	14,613	14,236	14,800	6,500	6,488	6,133	6,360	6,700	
Japan	96	85	78	86	87	152	141	128	133	133	
Pakistan	177	221	215	188	189	92	114	106	87	93	
Philippines	49	51	43	45	45	38	41	31	35	38	
Thailand	483	526	440	427	393	352	363	275	220	295	
Turkey	154	192	195	175	180	190	220	210	200	210	
EC-12											
Belgium/Lux.	1	1	1	1	1	1	2	2	3	2	
France	70	41	39	33	29	190	120	124	120	115	
Germany, FDR	8	14	27	54	60	27	55	106	195	216	
Greece	22	25	22	21	21	31	38	35	31	37	
Italy	186	169	156	162	160	270	235	223	230	225	
Netherlands	5	5	6	12	16	17	19	30	51	57	
Portugal	212	195	198	196	161	43	44	44	44	44	
Spain	113	103	105	99	100	76	71	78	69	50	
U.K.	32	45	60	91	154	125	154	229	294	514	
NORTH AMERICA											
Canada	35	45	73	57	45	64	86	70	116	73	
Costa Rica	43	43	48	56	43	23	22	29	32	23	
El Salvador	58	58	60	45	62	48	35	50	24	42	
Guatemala	170	170	173	172	140	111	120	123	86	94	
Honduras	59	66	73	50	95	33	48	47	23	61	
Mexico	1,600	1,800	1,950	1,950	1,850	820	1,000	1,025	1,100	1,075	
Nicaragua	84	86	82	50	85	59	59	59	34	60	
U.S.	591	583	605	683	553	956	1,004	1,038	1,175	872	
SOUTH AMERICA											
Argentina	225	191	254	211	156	240	210	281	163	139	
Brazil	5,319	5,317	5,484	5,220	5,904	2,615	2,550	2,210	2,108	2,752	
Chile	85	83	89	86	76	94	101	89	81	100	
Colombia	110	132	127	128	130	80	99	104	96	100	
Dom. Rep.	69	53	43	63	75	55	40	29	43	69	
Ecuador	58	58	55	58	60	34	34	43	38	40	
Paraguay	60	64	50	68	65	51	52	32	52	50	
Peru	52	57	60	65	70	40	46	53	56	60	
Venezuela	51	72	76	89	92	24	38	40	48	50	
USSR	53	57	53	50	50	150	160	75	70	60	
TOTAL	26,159	26,599	26,487	25,896	26,955	14,231	14,601	14,064	14,134	15,464	

Table 12

## LENTIL AREA AND PRODUCTION FOR SELECTED COUNTRIES

	Harvested Area in Thousand Hectares					Production in Thousand Metric Tons				
	1984	1985	1986	1987	1988	1984	1985	1986	1987	1988
AFRICA										
Algeria	13	5	8	7	6	2	1	2	1	1
Egypt	8	8	9	10	9	10	13	14	18	15
Morocco	68	88	86	90	65	25	46	70	36	51
ASIA										
India	943	1,091	1,087	1,053	1,100	534	663	659	653	700
Iraq	5	5	4	5	5	3	4	3	4	4
Jordan	5	5	5	5	5	1	2	2	2	2
Pakistan	83	58	81	76	75	22	31	32	31	35
Syria	60	66	67	89	180	36	48	63	72	185
Turkey	620	577	747	850	875	570	618	850	900	950
EC-12										
France	8	8	8	8	8	13	13	13	13	13
Greece	5	4	2	2	2	5	5	2	2	2
Italy	2	2	2	2	2	1	1	1	1	1
Spain	67	64	66	91	72	44	51	39	49	51
NORTH AMERICA										
Canada	62	70	115	239	144	39	61	175	314	64
United Sta	29	41	64	58	29	27	37	86	81	41
SOUTH AMERICA										
Chile	36	37	46	33	25	25	25	25	20	16
Argentina	11	16	15	22	18	7	12	15	25	15
TOTAL	2,014	2,129	2,397	2,618	2,602	1,357	1,619	2,036	2,197	2,131

Table 13

## GARbanzo BEAN AREA AND PRODUCTION FOR SELECTED COUNTRIES

		Harvested Area in Thousand Hectares						Production in Thousand Metric Tons					
		1984	1985	1986	1987	1988		1984	1985	1986	1987	1988	
AFRICA													
Algeria	:	51	58	70	68	67	:	16	18	26	22	22	:
Egypt	:	8	8	10	8	8	:	11	13	18	13	17	:
Morocco	:	60	77	82	77	73	:	29	45	71	61	56	:
ASIA													
India	:	7,161	7,805	6,984	5,806	7,800	:	4,751	5,788	4,532	3,622	5,700	:
Pakistan	:	977	1,033	1,082	821	1,055	:	527	586	583	371	598	:
Syria	:	53	79	38	84	90	:	36	50	28	43	75	:
Turkey	:	345	400	533	600	650	:	335	400	630	700	750	:
EC-12													
Greece	:	7	5	4	5	4	:	8	6	4	5	5	:
Italy	:	11	10	9	8	8	:	14	12	10	9	9	:
Portugal	:	27	26	25	24	24	:	14	13	12	12	12	:
Spain	:	88	88	90	91	77	:	60	58	58	64	57	:
SOUTH AMERICA													
Chile	:	11	13	15	14	15	:	9	10	15	8	10	:
TOTAL	:	8,799	9,602	8,942	7,606	9,871	:	5,810	6,999	5,987	4,930	7,311	:

## COTTON PRODUCTION IN INDIA

**OVERVIEW:** Cotton production in India is of great significance to the overall economy as well as to the agricultural sector. Cotton supports roughly 60 million people in farming, trade, and fabric production as well as sustaining the Indian textile industry, the largest organized industry in the country. In the past 3 years, India has accounted for roughly 23 percent of the world's cultivated cotton area, while producing 10 percent of the total crop. Although India ranked first in the world with respect to area devoted to cotton production, with 7.7 million hectares in 1988/89, it ranked fourth in world production, with output estimated at 8.2 million (480 lb) bales. For the most part, India's cotton crop is dependent on unreliable monsoon rainfall, resulting in an unstable production environment. Droughts have severely impacted cotton output in the 1980's, as occurred during the 1983 and 1986 crop seasons, when production shortfalls approached 1 million bales. In recent years, India has made remarkable progress in improving cotton productivity, however, yields per hectare are still among the world's lowest. For example, 1988/89 yields are estimated at 232 kilograms per hectare, compared to an estimated U.S. yield of 699 kilograms per hectare.

The 1988/89 crop season progressed extremely well, due to the timely arrival of the summer monsoon. Overall rainfall distribution in the cotton regions was excellent. Because 70 percent of India's cotton crop is rainfed, the distribution of precipitation is a crucial factor. An unusual storm in September dumped 12-14 inches of rainfall in the important irrigated cotton region of northwest India, including the states of Punjab, Haryana, and Rajasthan. Abnormally heavy flood damage and waterlogged conditions associated with this storm reduced cotton production, with losses in the Punjab estimated at 150,000 bales. The favorable summer moisture conditions across the subcontinent also reportedly promoted widespread pest infestations in the cotton crop. Post-monsoon precipitation, which is crucial for the winter cotton crop in southern India, proved scanty. Soil moisture reserves, however, were reported to have been satisfactory for crop establishment and development. Production in the southern cotton zone is currently expected to be near normal.

**AGRONOMIC PRACTICES:** Cotton is grown under extremely diverse conditions across the country, from the sub-himalayan zone in the northern state of Punjab to the tropical zone in the southern state of Tamil Nadu. Great differences exist in agroclimate, soils, crop calendar, and water resource availability from one production zone to the next. The overriding variability of the cropping environment, combined with the large portion of the crop which is rainfed, contribute directly to the instability of cotton production in India. Additionally, some 130 insect pests are known to infest the crop, causing an estimated yield loss of 10-15 percent annually.

Generally, cotton cultivation occurs year-round at some location in the country. The primary summer crop (kharif) is planted in April-May and harvested in November-December. The winter crop (rabi) is sown in August-September and harvested in February-March. A small summer crop is also grown in the south, and is planted in February-March and harvested in September-October. As stated earlier, nearly 70 percent of all cotton production is rainfed, relying on monsoon and post-monsoon precipitation.

Weather anomalies are very prevalent in India, and commonly impact cotton output in one region or another. Hand cultivation is not uncommon, including broadcast sowing, weeding, spraying, and harvesting the crop. The seeding rate at planting can be very low compared to other major producers, averaging 2.5-4.0 kilograms per hectare, compared to 40-50 kilograms per hectare in Egypt and the USSR. Further, seed certification is low compared to other countries. Average farm size is approximately 2.3 hectares or 5.7 acres; however, 70 percent of India's farmers cultivate less than 2 hectares.

Cotton is grown in three primary zones of the country.

- 1) The Northern Zone is comprised of the states of Punjab, Haryana, and Rajasthan, where cotton is grown under irrigated conditions on fertile, alluvial soils. Yield is very high, with cotton grown in a multi-crop fashion in rotation with wheat, sorghum, and rapeseed. In 1988/89, this zone accounted for approximately 19 percent of total cotton area, yet contributed 36 percent of the total cotton output. Cotton varieties grown are primarily superior medium, medium, and short staple.
- 2) The Central Zone includes the states of Gujarat, Madhya Pradesh, and Maharashtra. Rainfed cotton predominates in this region, and is grown on black soils which are generally deficient in nitrogen and organic matter. Yield is very low. Cotton is generally mono-cropped, or grown in rotation with millet, sorghum, and pulses. This zone contained nearly 62 percent of total area, but contributed only 37 percent of total cotton production in 1988/89. Varieties grown include long, medium, and short staple.
- 3) The Southern Zone consists of the states of Karnataka, Andhra Pradesh, and Tamil Nadu. While irrigation exists, most cotton is grown under rainfed conditions. Soils are characterized as light to heavy black soils and red loams. Yield is above average, being higher than in the central zone but lower than the northern zone. Cotton is double-cropped with sorghum or millet. In 1988/89, this zone contained 15 percent of total area and contributed 26 percent of total cotton output. Both long and superior long staple cottons are grown, as well as hybrid varieties.

Cotton pests are extremely numerous and infestations are often severe. The pest management system is a critical factor in yearly production, as yield losses due to pests can reach 20-70 percent in fields without proper management. India is greatly dependent on insecticides to combat the problem. It has been estimated that of the total insecticide usage for all crops, cotton annually consumes roughly 50 percent. Producers are known to use a large number of insecticides, often in mixture, to combat insect problems. Average sprayings per crop are few, estimated at four to six applications. However, under heavy infestations 25-30 applications have been reported. The primary pests include Jassids, White Fly, and Pink and Spotted Bollworm.

**COTTON DEVELOPMENT:** Cotton research and development efforts since the 1960's have produced substantial results in yield, quality, and staple length. Though planted area has remained constant at nearly 8.0 million hectares, production has increased from 5 million bales in 1965 to an estimated 8.2 million bales in 1988/89. Although yield gains have been impressive, average yields remain very low by world standards, predominantly a result of the huge area subject to rainfed conditions.

Beginning in 1967, primary cotton research has been organized under the All-India Coordinated Cotton Improvement Project, sponsored by the Indian Council of Agricultural Research. Research was conducted at 30 centers located in the major growing regions. Currently, there are 72 varieties of cotton grown in India, including 9 hybrids. India is the world leader in hybrid cotton cultivation, which now accounts for nearly 13 percent of the total planted area. The great number of varieties grown in the country is considered to be a contributing factor to low overall yields. Thus, the government has taken steps to reduce the number of cultivated varieties to help maintain quality and unify the price structure. Currently, 58 varieties and 7 hybrids have been recommended for propagation.

Through the efforts of cotton researchers, the change in the varietal composition of the Indian cotton crop has been significant. When India became independent in 1947, virtually none of India's cotton output consisted of long staple varieties. At that time, medium staple varieties made up about 75 percent of the crop and short staple varieties about 25 percent.

In 1985, the varietal breakdown was as follows:

Superior Long Staple	32	percent
Long Staple	16	percent
Superior Medium Staple	37	percent
Medium Staple	9	percent
Short Staple	6	percent

The emphasis in the past on long staple cotton research and varietal development has created an imbalance in production, as medium staple cotton output has not met demand. Government price supports contributed to the problem by highly favoring long staple varieties. A major focus is now underway at several research centers to develop high-yielding medium staple varieties, especially adapted to rainfed conditions.

In addition to research, since 1971 the central government has sponsored an extension and subsidy program for cotton called the Intensive Cotton District Program (ICDP). Key producer districts were selected in each state, in which an entire package of improved technology and seed was introduced. All of the district's cotton growers received subsidized inputs for pesticides, fertilizers, plant hormones, and certified seed. Sufficient extension personnel also were available to maintain contact with growers and conduct pilot demonstrations of the new technology. As the ICDP program proceeds into 1989, it is expected to cover about 25 percent of India's cotton area, or 2 million hectares. Additionally, another 1 million hectares will be covered by hybrid cotton varieties.

OUTLOOK: The current outlook for cotton in India is favorable, owing to the importance of the crop to the textile industry and increasing domestic demand from an expanding population. For the past several years, the Indian Government has been instrumental in increasing cotton output by providing incentives and input subsidies to producers. Along this line, the government recently raised cotton support prices for the 1989/90 crop in order to continue to encourage expanded cultivation. Despite these increases, average producer prices in India remain low by U.S. standards. With the government fully committed to increasing output, few manmade obstacles remain. In the short term, production is expected to increase with the expansion of certified seed usage, along with improvements in agronomic practices. Steady increases in yield also are expected, particularly in the irrigated cotton areas, as improved technology is more widely adopted.

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Chart 1

## WORLD COTTON AREA

1988/89

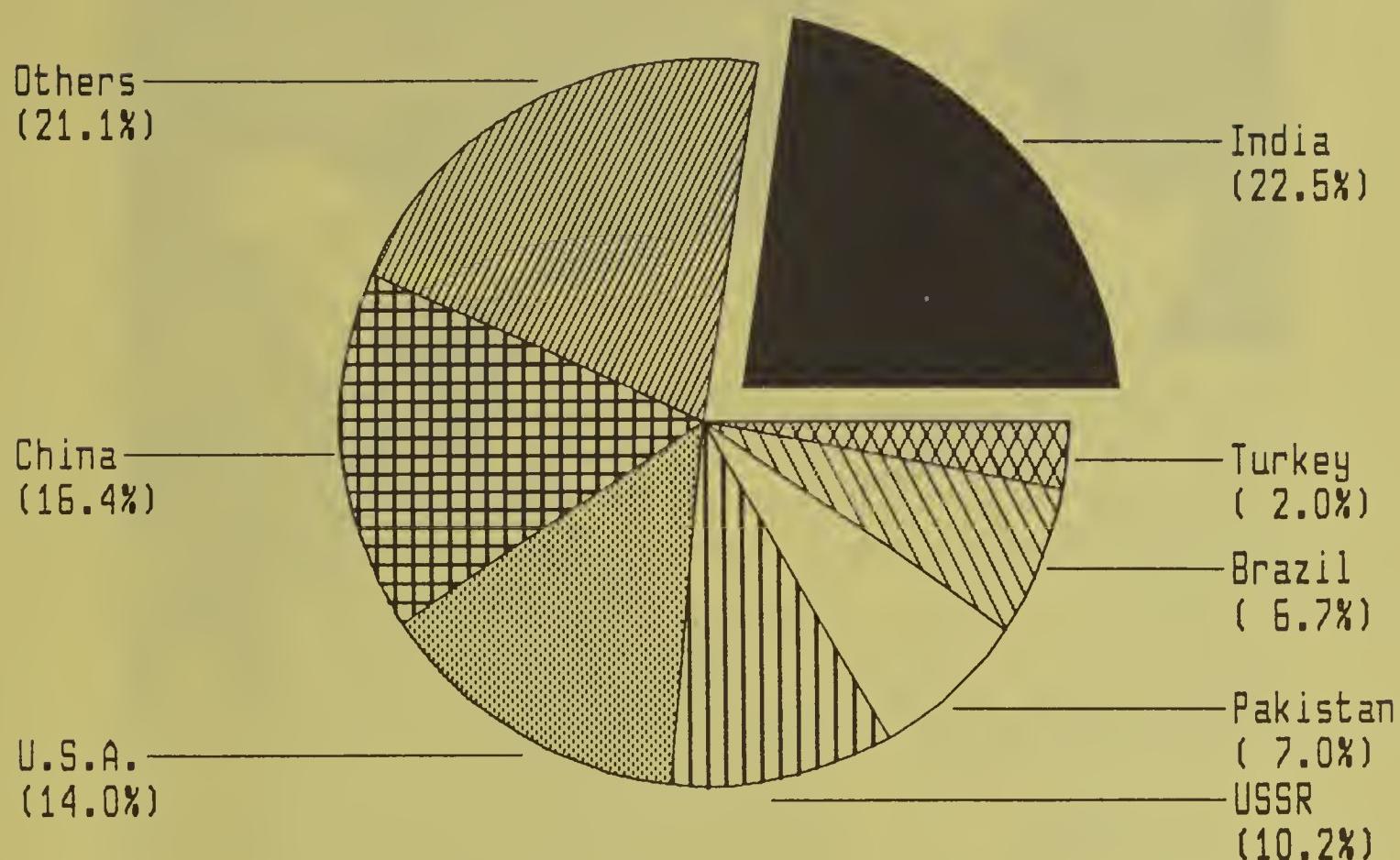
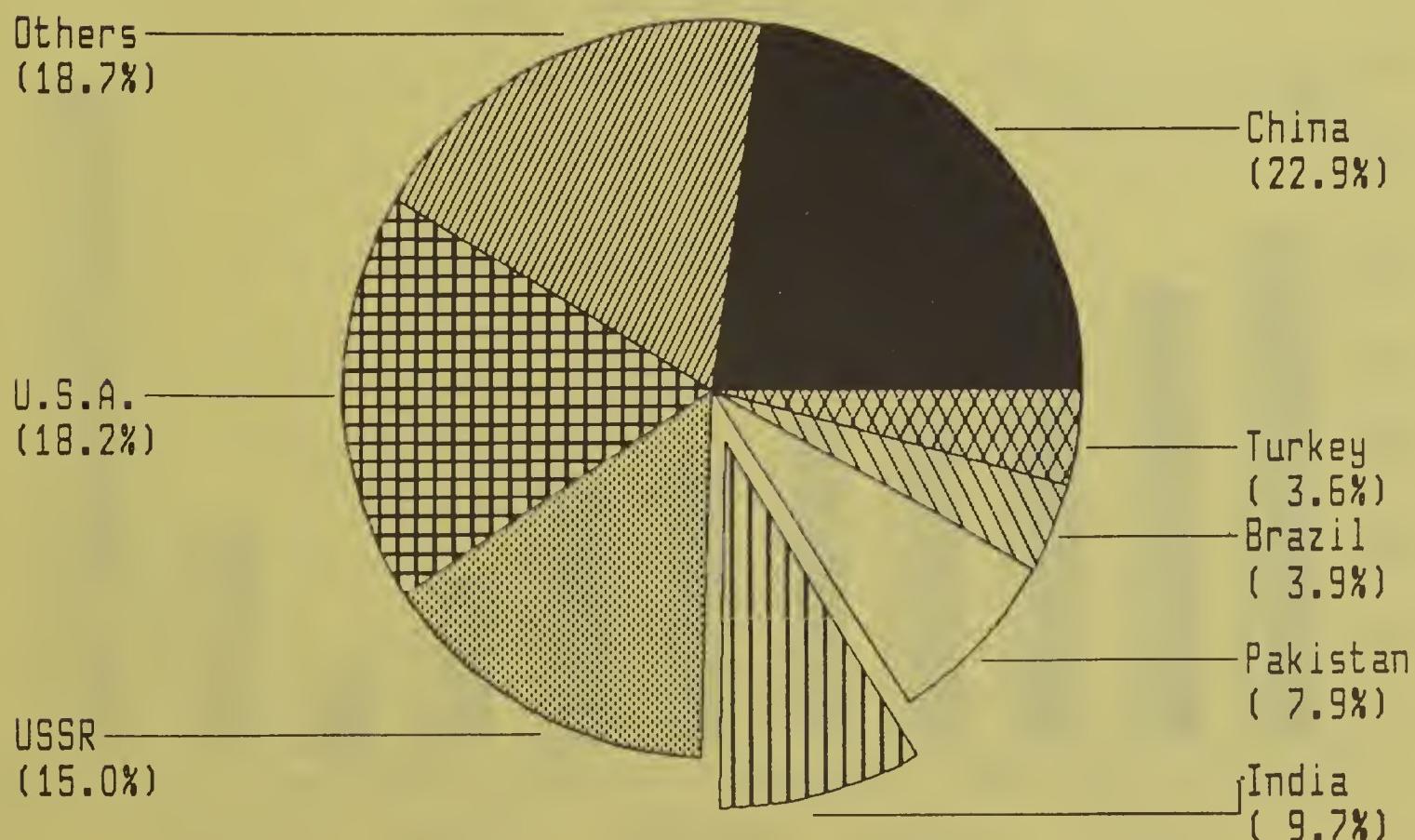


Chart 2

## WORLD COTTON PRODUCTION

1988/89



Map 2

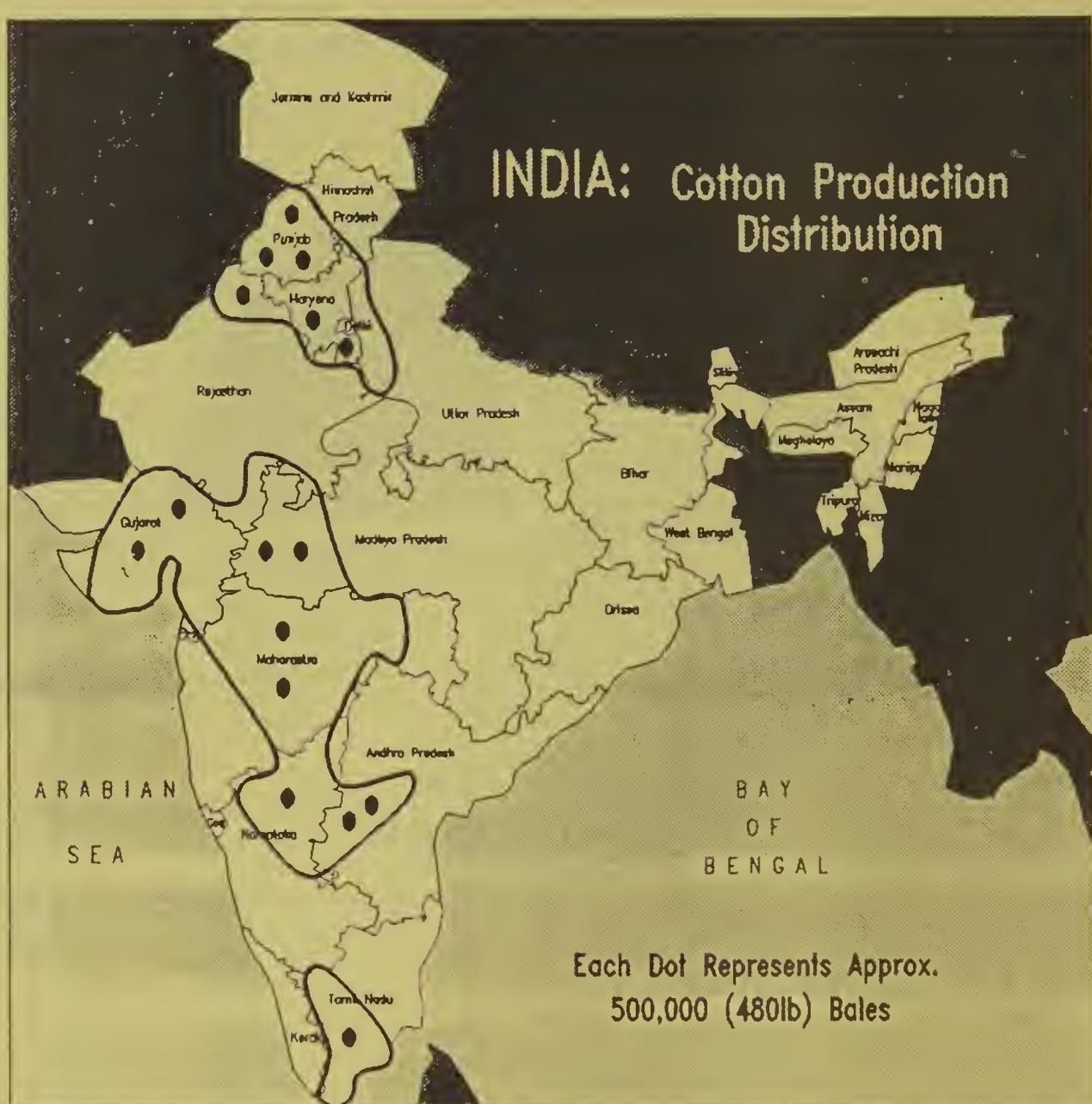


Chart 3

**88/89 Cotton Yields**  
State-Level and National Average

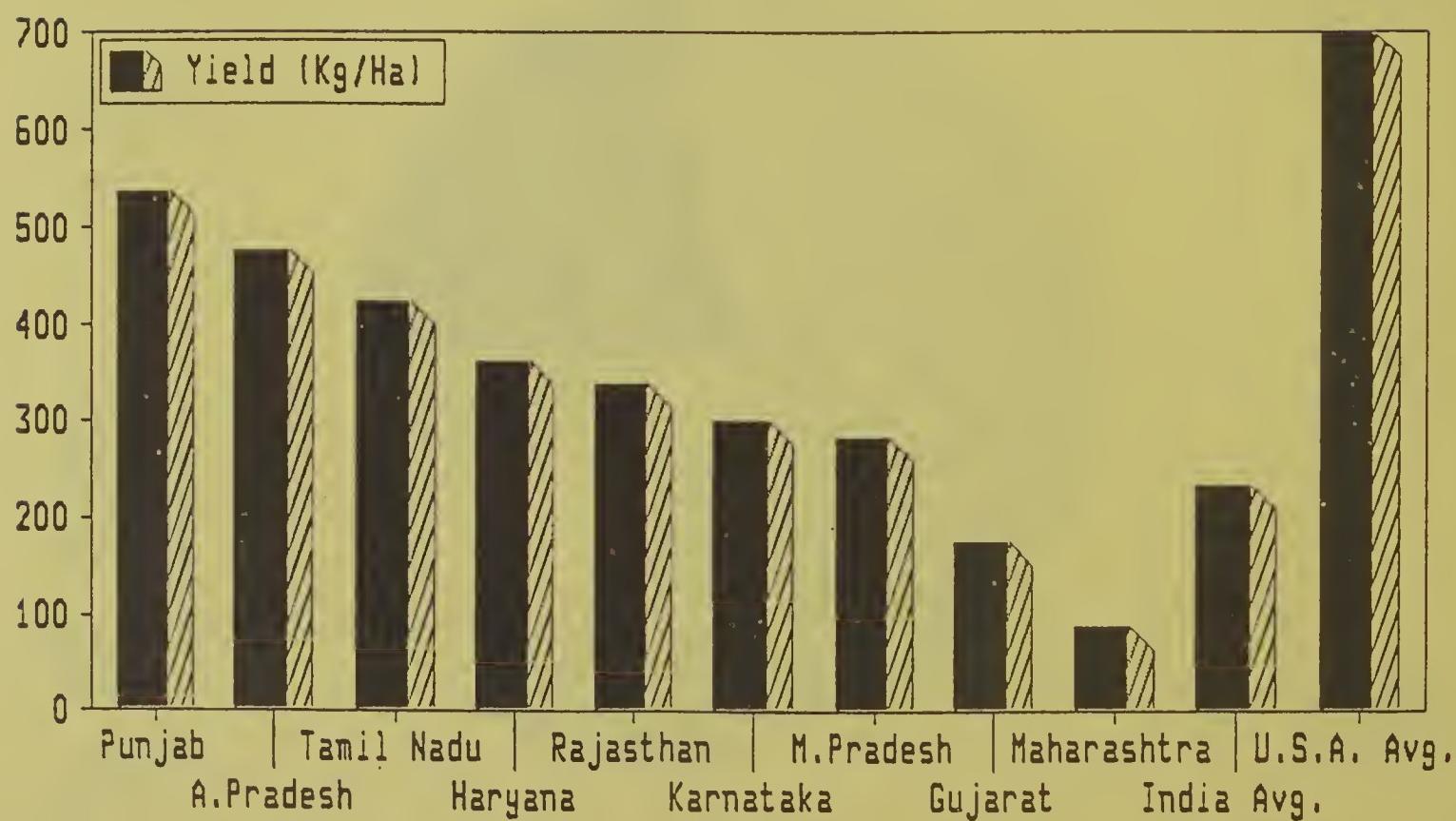
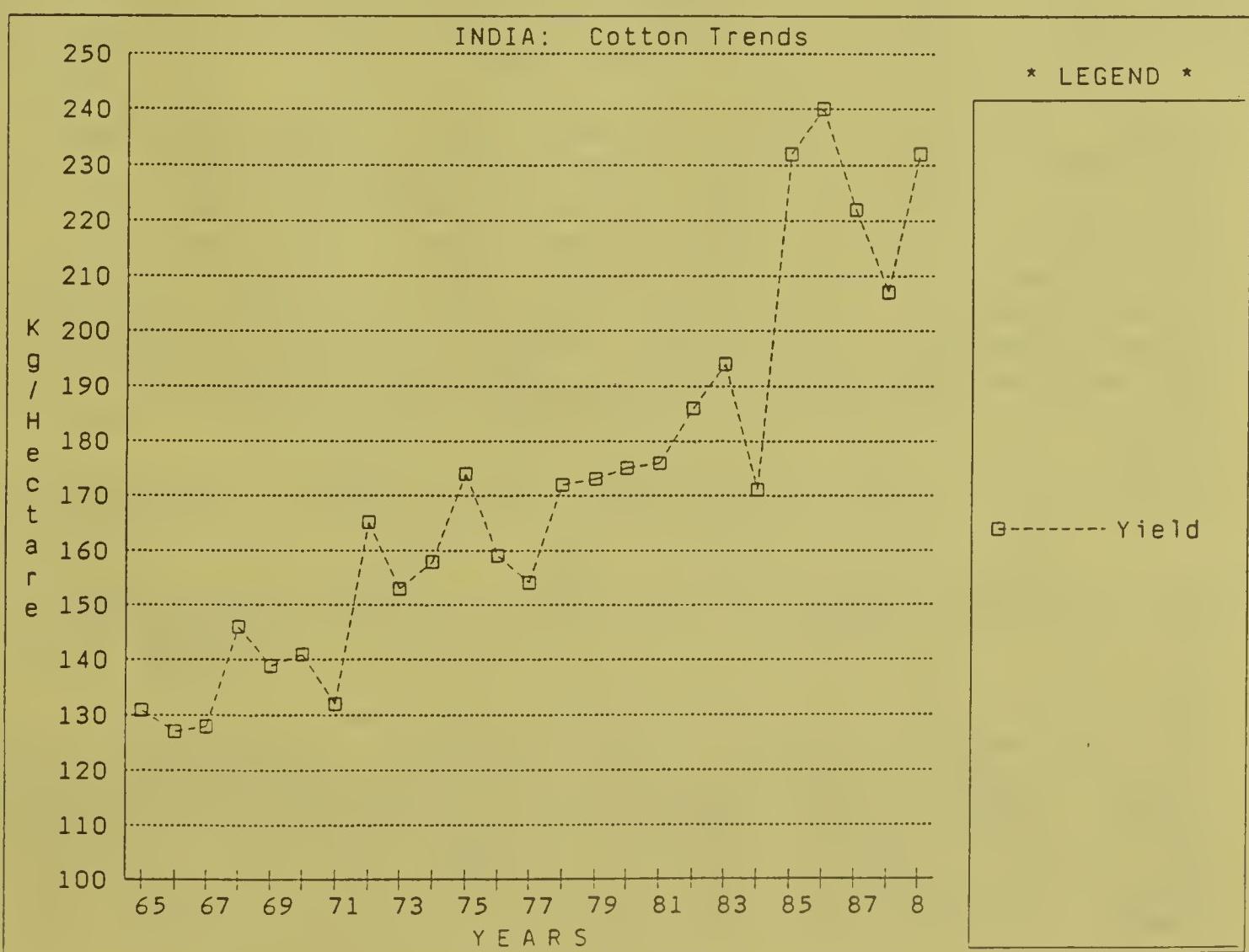
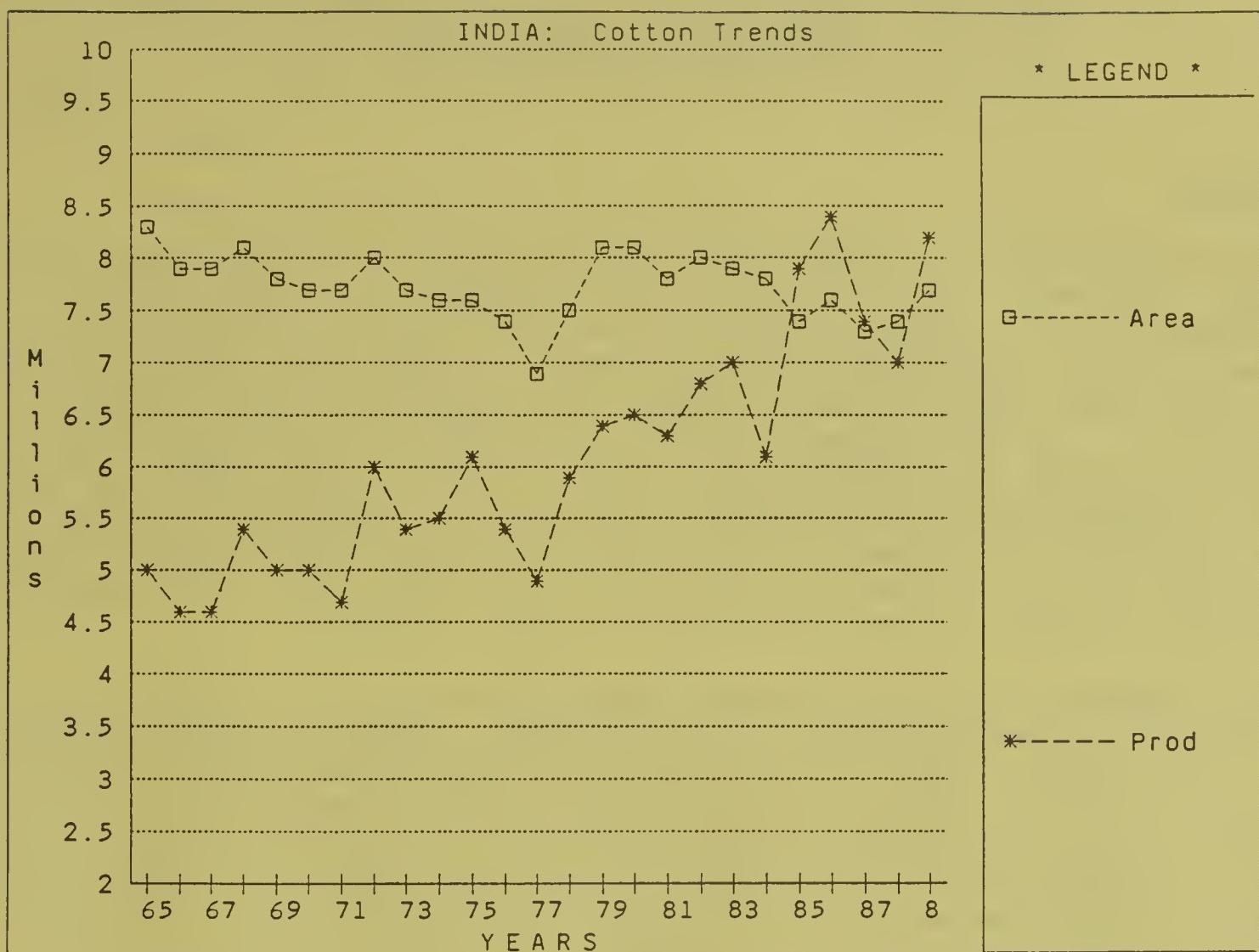


Chart 4



1989 WINTER GRAIN PROSPECTS IN THE NORTHERN HEMISPHERE  
OUTSIDE THE UNITED STATES

OVERVIEW:

Winter grains account for about one-third of the global wheat and coarse grain output. This year, winter grain production prospects in the Northern Hemisphere outside the United States are mixed. The outlook is favorable in northern Europe, South Asia, and East Asia. Prospects for winter grains in the Soviet Union appear about average. Dry weather has been a problem in southern West and East Europe, North Africa, and the Middle East. The area planted to winter grains during the fall of 1988 for harvest in 1989 in the Northern Hemisphere excluding the United States is estimated to be up slightly from last year. Preliminary indications of sown area reductions in Canada, northwest Africa, and Eastern Europe likely have been more than offset by increases in Western Europe, South Asia, China, and Mexico.

WESTERN EUROPE: Winter grain conditions are generally very good in the north but are less favorable in large parts of Spain, southern France, central Italy, and Greece. Fall weather in northern Europe was excellent, and a mild winter allowed winter grains to break dormancy and develop ahead of schedule. The mild weather probably kept winterkill to a minimum, but is expected to lead to increased pest and disease problems this spring. In southern Europe, however, many areas had well below normal amounts of rainfall, and yield potentials may have already been reduced in some regions. Widespread showers in northern Italy, Spain, and southern France have improved crop conditions during the past few weeks, but greater than normal rainfall in coming weeks will be needed to produce average yields in many areas.

- o France: Mild, dry weather has covered most of France since last fall, favoring fall planting and leading to accelerated development of winter grains. There is some concern that black slug infestation could be higher than normal in the major winter grain areas of the north this spring. Very low winter rainfall in west-central and southwestern France left irrigation supplies and soil moisture at low levels, but deep soil moisture reserves have not been significantly affected and recent rains have helped to replenish moisture supplies near the surface. Overall, winter grain conditions are very favorable, particularly in the northern higher yielding regions. However, spring rains are still needed in the southwest.
- o United Kingdom: Winter grains area is up 400,000 hectares over last year due to excellent fall planting weather, according to a government survey. Winter grain area planted in the fall of 1987 was down because of poor planting conditions. High winter wheat plantings in the fall of 1988 indicate a return to the long-term trend of increased wheat area at the expense of barley. Winter climate conditions have been abnormally mild and dry, leading to accelerated crop development, and the possibility of greater than normal pest and disease problems. Overall, conditions are very favorable.

- o West Germany: Winter grains area is up slightly this year. As in the United Kingdom, the fall and winter were very mild, leading to advanced crop development, but leaving the crop susceptible to pest and disease infestation. The outlook is very favorable.
- o Italy: Despite late March and early April rains in the north, some parts of Italy are still experiencing drought conditions due to abnormally low rainfall throughout the winter. Central Italy, where 40 percent of the soft wheat crop is grown, remains especially dry and plants are showing delayed and uneven development. Some replanting is expected in the Maremma area, between Latium and Tuscany. The Po Valley was very dry throughout the fall and winter, but sustained heavy fog helped preserve soil moisture levels and good showers throughout March have improved the outlook for winter grains. Drought damage has been minimal in the major durum producing regions of southern Italy.
- o Spain: Yield potentials in many parts of Spain may have already been affected by drought. Rainfall in most of the grain producing areas averaged about 15 percent of normal from December 1988 through February 1989. In addition, hard frosts during emergence hurt wheat plantings in some parts of the north. Recent rainfall has improved conditions somewhat, but sustained rainfall through April is badly needed as Spain enters the traditional dry season. Conditions are still unfavorable across most of the winter grain areas.
- o Portugal: Wheat area is estimated to be 20 percent above the 1987/88 level. Weather conditions were favorable for planting, and good rains came in late January through early February. Overall, conditions are very favorable, and normal rains should mean an increase in yields after last year's poor crop.
- o Greece: Unlike most of Europe, Greece experienced some cold weather and snow which interrupted fall planting. Most of the winter was warm and dry, but heavy rains in late March helped to replenish soil moisture levels. Crop development will be later than normal, but overall conditions are still favorable.
- o Denmark: Reports indicates that winter grain area expanded dramatically due to excellent fall planting conditions and a government scheme designed to keep a large portion of arable land under crops during the winter. The scheme is part of a package designed to reduce nitrate pollution. Conditions are very favorable.
- o Belgium/Luxembourg: Overall winter grains area is unchanged, but a small shift was made from barley to wheat. Fall planting conditions and winter weather were optimal. The outlook is very favorable.

EASTERN EUROPE: Overall prospects for winter grains remain unfavorable in several areas, particularly in southern Czechoslovakia and the Balkans due to an unusually cold November and persistent above normal temperatures and below average rainfall since January. Across East Europe, winter grain stands are extremely variable and crop conditions are less favorable than at this time last year in spite of recent beneficial rains. Winter grains area may be down slightly from last year's level.

- o Hungary: Winter grains entered dormancy this year less developed than normal. Stand density was satisfactory, but tillering was reportedly down 40 percent from normal due to insufficient moisture and cold autumn weather. Winter snowfall was also limited. Southern Hungary remains quite dry while central and northern production areas, despite recent beneficial rains, still have below normal soil moisture levels. Planted area for winter grains may be down marginally this year.
- o East Germany: Fall seeding of winter grains began on schedule, but autumn dryness delayed planting of about 30 percent of the crop. Soil moisture continues to be limited and very mild winter temperatures may result in above average pest problems. Sown area is expected to rise by this year in order to meet ambitious production targets initiated in the wake of last year's poor grain harvest. However, a significant increase in inputs is not expected, as planners rely on hopes of better weather and management practices.
- o Czechoslovakia: Winter grains were sown under generally good conditions with the exception of the southern region from Mikulov to Pehorelice where stands were thin due to late planting and low soil moisture.
- o Yugoslavia: Abnormally cold autumn temperatures severely affected germination and establishment of winter grains in many areas. Additionally, winter drought prevented recharge of badly depleted soil moisture. Rapidly escalating costs of inputs as well as high interest and inflation rates will likely have a depressing effect on production. Winter grain area may be down from last year.
- o Romania: Extremely cold November weather followed by below normal precipitation reduced winter grain prospects, particularly in Wallachia and Moldavia. Barley condition is generally better than wheat since barley is sown earlier and was less affected by the November cold snap. Reservoir levels are very low and will restrict irrigation of winter grains.
- o Bulgaria: Sowing conditions were very good throughout the major winter grain production areas and crops were in excellent condition as late as December. The outlook is more favorable here than elsewhere in the Balkans, but not as good as at this time last year.
- o Poland: Winter wheat, barley, and triticale plantings are estimated to be up 5 percent over last year. A cold spell in late November may have caused some localized damage, but very mild weather throughout most of the winter allowed crops to develop ahead of schedule. Overall conditions are favorable.

USSR: Most of the major winter grain regions in the USSR have experienced generally mild, but dry weather since last fall. These conditions could have increased the vulnerability of the grains to diseases and pests and contribute to the possibility of winterkill greater than normal. In the overall, prospects for the winter grain crop appear about average.

Temperatures throughout most of the European part of the country have been well above normal (6-8 degrees Celsius) for over 3 months. Above normal temperatures caused the crop in the south to break dormancy and enter the tillering and stem extension stages several weeks earlier than usual, which will increase the need for moisture.

While deep snowcover has persisted in parts of the Central Chernozem and the Volga Vyatka regions, much of the west and southwest has been deficient in precipitation. Some parts of Ukraine, Moldavia and Byelorussia have received only about half the normal supply of precipitation since last fall. Parts of the northern North Caucasus and Lower Volga also are deficient. In early April, however, abundant snowfall (5-15 centimeters) was reported over much of the European USSR. Below-normal temperatures were associated with this needed precipitation. The entire southern half of European USSR needs more precipitation.

Spring tillering has progressed over the southern half of Byelorussia, all of the Ukraine and all but the northern most part of the North Caucasus. Stem extension is taking place in the south of this area, adjacent to the Black Sea.

Articles in the Soviet press have expressed concern about the effects of ice crusting and persistent, deep snowcover in some places. The crusting was caused by intensive thawing, brought on by mild temperatures and subsequent compacting. Most affected by the crusting were the Baltics and parts of Byelorussia and the Central Chernozem areas. Smothering, often prevalent in rye, seems to have been a more serious problem than usual this season, especially where deep snow has covered fields and the soil was only lightly frozen. Smothering reduces the density of the stands and weakens the surviving plants, making them more subject to harm from low temperatures late in the spring. The early onset of weather permitting spring field work will enable the damaged stands to be "repaired" by overseeding. This is done usually by seeding spring barley into the remaining stand of winter grain.

The nature of the winter has not been such that large areas of grain have been killed outright. However, reports of flooding in Krasnodar in mid-February indicated that about 100,000 hectares of winter grains, probably almost entirely wheat, were lost.

#### NORTHWEST AFRICA:

- o Morocco: Compared to last year, wheat area will likely be up, but inadequate rainfall in important northern growing regions during December and January probably reduced wheat yield prospects. Barley planted area may be down due to large carry-over stocks and related low producer prices which reduced planting incentives. Weather conditions have been more favorable in the barley areas than in the wheat regions with barley yields expected to be near normal.

- o Algeria: Winter wheat area and production are expected to decline this year. Revisions in agricultural policies reduced government involvement in production planning. Producers used the opportunity to shift from wheat to more profitable cash crops, causing a 5-percent reduction in planted winter grain area. This, combined with very inconsistent rainfall patterns across Algeria, has caused a reduction in production prospects for soft wheat and durum. Barley area may have declined slightly, but overall winter grain prospects are somewhat more favorable than at this time last year.
- o Tunisia: Winter grain yields should improve over last year's drought-reduced level, but total output is expected to remain below normal due to dryness. Planting conditions were adequate, at best. Yields probably have been negatively affected by below normal precipitation throughout the growing season. Conditions are not favorable, though not as severe as last year due in part to more moderate temperatures. Barley and wheat area is forecast up from last year, but planted area is still below the long term average.

#### ASIA:

- o India: Autumn planting conditions for winter grains were very favorable across the northern growing region, following an excellent summer monsoon season. Soil moisture levels were adequate to boost early planting operations, while irrigation reserves were abundant. Winter weather was predominately dry and cool. Crop growth has been delayed by nearly 3 weeks from normal, with the majority of grains in early grainfill stage in late March. Normally, major harvesting operations occur in early April. While the overall outlook for winter grains is favorable, late maturing wheat and barley crops could be subject to yield losses, as a greater-than-normal proportion of the crops will fill and mature during the hot season (April/May).
- o Pakistan: In comparison to the two previous winter seasons, the current winter grain outlook is very favorable. Good soil moisture conditions at planting, including timely rains in the rainfed zone of northern Punjab, have boosted the overall outlook. Cool temperatures and timely winter showers have maintained near ideal growing conditions. Delayed crop phenology, as in India, could force a large portion of the winter grains to mature late--this could cause yield problems due to high temperatures during the hot season (April/May). Wheat area may be up slightly from last year.
- o China: Virtually no rain fell from October to December making the autumn of 1988 one of the driest in decades. The drought was especially severe in the major grain provinces of Henan, Hubei, Anhui, Jiangsu and Shandong and hampered crop establishment prior to winter dormancy. However, mild winter temperatures reduced potential winterkill damage. Since January, the country has received above normal precipitation in almost all the winter grain areas, recharging soil moisture and improving prospects. In the southern grain areas, cool spring temperatures have delayed crop development slightly, but overall growing conditions appear to be the best in recent years. In response to government production incentives and strong free market prices for grains, the 1989 winter grains planted area may be up slightly from last year.

- o Japan: Mild and dry winter weather, followed by heavy, mostly beneficial rainfall and warm temperatures this spring, created favorable growing conditions. Winter wheat and barley area likely increased slightly as land continued to shift out of rice cultivation.
- o South Korea: Extremely dry weather during the planting season and over the winter is expected to sharply depress barley yields. Heavy rainfall from January to March provided some relief and improved growing conditions, but production is not expected to reach the government target. Government incentives to encourage winter grain production, which is primarily barley, have been generally unsuccessful due to low grower returns.

#### MIDDLE EAST:

- o Turkey: Moisture supplies have been inadequate since the beginning of the year in the primary winter grain production areas. March rains helped alleviate the dryness, but the northern two-thirds of Asiatic Turkey need more rain. Unseasonable cold November weather hampered stand development and retarded root growth. Winter grain area is estimated to be up slightly from last year.
- o Syria, Lebanon, and Israel: These countries have had generally below-normal precipitation since December. Fall planting was delayed by about 3 weeks in Syria due to spotty rains. Coastal Syria has had only about a third of normal precipitation since January, while northern Israel has received approximately 45 percent of normal precipitation. The outlook is fair to poor for wheat and barley in these countries.
- o Jordan: Winter grains were sown on schedule for April-June harvest under favorable conditions. The outlook is generally favorable.

#### NORTH AMERICA:

- o Canada: The area planted to winter wheat is down about 14 percent from last year. (Winter wheat comprises about 10 percent of Canada's total wheat crop.) The reductions came in Saskatchewan and Manitoba, where soil moisture levels remained low after last summer's drought. Winter rye plantings were increased by over 50 percent to protect the soil, but much of this area may be replanted to spring grains. Fall and winter precipitation has benefited crops in both Ontario and the western provinces, and snow cover appears to have been adequate to protect plants from significant damage. The outlook for winter grains is favorable.
- o Mexico: Winter wheat production is centered in northwestern Mexico and is irrigated. Adequate rainfall during the summer of 1988 insured ample irrigation supplies for the 1989/90 wheat crop. Wheat area is estimated to have sharply increased.

Note: The initial forecast of wheat and coarse grain area, yield, and production for the 1989/90 year will appear in the May edition of the World Agricultural Production report.

## MEXICAN STRAWBERRY PRODUCTION

Mexico's 1988/89 harvest of fresh strawberries is currently forecast at 115,200 tons, up 3 percent from the record volume produced a year ago. The projected increase in production is directly related to a 14-percent expansion in area made possible by the elimination of the government's strawberry planting quota system. Members of the National Association of Horticultural Producers adhered to their organization's authorized planting quota. Independent producers, however, planted extensively thereby substantially boosting production prospects for the 1988/89 season.

The downturn in producer price levels normally associated with a bumper crop appears to have been avoided. Minor hail and frost damage proved beneficial by naturally thinning the crop, lowering yields, and expanding the peak harvest period, thereby preventing an oversupply situation and the inevitable downward pressure on prices. Other factors evident this season, such as more extensive use of early and late blossoming varieties, expanded plantings of humidity resistant varieties (Lasen and Parker), and strong domestic demand for fresh strawberries prompted by an increase in consumer purchasing power, bode well for future crops. Surprisingly, this is Mexico's first harvest season where domestic prices for fresh strawberries are more attractive than export prices. Quality appears good with approximately 13 percent of the harvest expected to be graded "A," 50 percent graded "B," and only 17 percent graded "C."

Following two consecutive years of ample production of frozen strawberries, strong domestic and international demand for fresh supplies is expected to push the frozen pack level down 12 percent to 45,000 tons during the 1988/89 season. Because of this heightened demand for fresh strawberries and the natural, weather-related thinning process that occurred, the usual peak oversupply situation that forces down prices for processors never materialized. As a result, processors are experiencing problems obtaining fresh product at reasonable prices and many have delayed processing altogether. The processing plant owned by the producer cooperative (Asociacion Agricola Local de Productores de Fresas del Valle de Zamora) safeguards low income producers/processors by allowing them to freeze their product and wait for prices to rise before selling. Currently looming over all processors, however, is the imminent threat of losing price competitiveness should the government implement its proposal to ban the subsidy on sugar.

Table 14

## MEXICO: STRAWBERRIES, FRESH &amp; FROZEN

Year	Area Harvested		Yield Tons/Hectare	Fresh Production Metric Tons	Frozen Production Metric Tons
	Hectares				
1970/71	6,903		14.98	103,440	N/A
1971/72	5,682		15.53	88,228	N/A
1972/73	6,661		15.72	104,684	N/A
1973/74	6,339		16.24	102,958	N/A
1974/75	5,328		16.44	87,618	N/A
1975/76	5,684		15.71	89,321	N/A
1976/77	5,529		15.98	88,327	N/A
1977/78	5,709		15.50	88,502	N/A
1978/79	5,340		16.38	87,450	N/A
1979/80	5,200		15.94	82,900	N/A
1980/81	4,400		17.50	77,000	38,000
1981/82	3,900		16.33	63,700	37,300
1982/83	3,800		20.24	76,900	33,000
1983/84	4,200		22.02	92,500	40,000
1984/85	3,500		19.00	66,500	25,554
1985/86	4,000		17.00	68,000	28,052
1986/87	4,750		19.14	90,900	39,753
1987/88	5,600		20.00	112,000	51,408
1988/89 <u>1/</u>	6,400		18.00	115,200	45,000

1/ Preliminary

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## WORLD PINEAPPLE PRODUCTION INCREASES

Commercial production of fresh pineapple is expected to expand for the fifth consecutive year. Combined output by the world's leading producers is forecast at over 5.8 million tons, up 6 percent from a year ago.

Expansion continues in Thailand, the world's leading pineapple producer. Current forecasts place the 1989 harvest at a record 1.95 million tons, 10 percent greater than last year's record crop. Several factors have contributed to this growth--increased area, consistently favorable weather conditions, ample rainfall, greater chemical usage, and improved cultivation techniques. Particularly significant are the growing number of farmers that are "forcing" crops, utilizing double-row cropping methods and minimizing the number of ratoon crops. "Forcing" is a chemical process that accelerates fruit maturation and allows growers to satisfy off-season market demand while, at the same time, securing higher farmgate prices. Double-row cropping boosts yields by supporting up to 50,000 plants per hectare compared to only 30,000 under the traditional single-row method. Replanting after one or two ratoon crops (rather than three or four) has significantly raised average fruit size and, thus, has become the preferred cropping cycle during the past several years.

The outlook for the 1989 harvest in the Philippines appears favorable with production estimated at 1.66 million tons--marginally above last season's drought-reduced crop, but slightly below the bumper harvest in 1987. Currently, there is some concern regarding the untimely rains over plantation areas of Mindanao. Although the additional moisture will benefit new plantings, these intermittent rains, during what is typically the Philippine's dry season, have already disrupted normal harvesting schedules and prompted speculation that the lack of sunlight on maturing crops will reduce fruit sweetness. However, on the plus side, early season rains boosted yields and fruit size.

Pineapple production in the United States is expected to rebound to 616,885 tons--a 3 percent gain over last season. Growing conditions have been favorable with ample rainfall and no reported disease or pest problems. Two major factors have contributed to the projected turnaround--an increase in area planted (i.e., area planted in 1988 that will be harvested as high-yielding plant crop during 1989) and greater reliance on systematic year-round harvesting that has been accomplished by varying planting dates, planting elevations, and cultivation methods.

The 1989 season appears to be a banner one for Mexican pineapple growers. The fresh crop is currently forecast at 333,000 tons--35 percent greater than the 1988 harvest--reflecting a sharp rise in harvested area and a 4-year upward trend in grower prices. Yields are expected to remain stable at approximately 45 tons per hectare. Quality is reportedly good, although losses due to disease and insect damage are estimated at 6-10 percent of total production.

Pineapple production in South Africa is expected to show only a marginal recovery following last season's flood damage. The 1989 crop is forecast at 259,700 tons, only a 2-percent increase over the volume harvested last year. Reportedly, future expansion is expected to be limited by rising input costs, the closure of the only cannery in Natal, and high air freight rates as well as restricted air freight capacity for fresh exports.

Pineapple production in Malaysia is expected to increase for the fourth consecutive year. Total crop volume is forecast at 206,500 tons, 6 percent greater than a year ago and potentially the largest Malaysian crop since 1974. The most significant factor contributing to the recent turnaround in the Malaysian industry is the entry of the quasi-government cannery into the plantation business. The Pineapple Cannery of Malaysia (PCM) harvested its first plant crop in April 1988 and expects to harvest an additional 200 hectares during the 1989 season. Because of the continuing decline in smallholder area, the PCM is expected to significantly increase its estate area over the next several years. A secondary factor bolstering the industry is the implementation of advanced cultivation techniques utilized by other estate growers. These include a new practice of replanting from crowns, slips, or suckers after every harvest (i.e., no low-yielding ratoon crops), exclusive use of the high yielding "hybrid 19" variety, regular fertilizer applications, and greater planting densities resulting in average yields of 29-30 tons per hectare.

Kenya's 1989 pineapple crop is currently forecast at 215,000 tons--up 13 percent from last season--reflecting plentiful rainfall and harvesting of 130 additional hectares of plant crop. Production continues to be constrained by the limited amount of land suitable for pineapple cultivation as well as the annual imbalance between one high-yielding plant crop vis-a-vis two less productive ratoon crops. One major cannery produces the bulk of fresh pineapple. Its large-scale production operation requires high input management techniques utilizing supplementary irrigation, soil fumigants, fertilizers, and hormones for flower induction, fruit initiation, and uniform fruit ripening. The on-going liquidity problems plaguing smallholders have prohibited extensive use of these types of inputs, thereby lowering the average national yields. Productivity is expected to improve in 1989 as 1,500 additional hectares of plant crop--cultivated using high input management techniques--are harvested.

Reduced 1989 crops are forecast for three smaller, commercial producers--Australia, Cote d'Ivoire, and Taiwan. Production in Australia is currently estimated at 167,500 tons, marginally below last year's record crop. For the past few years, Australian growers have strived for moderate expansion via increases in harvested area--resulting in consecutive, record crops since 1986. Prospects for another record outturn in 1989 were dampened early in the season when hot, dry weather cut yields.

The production situation in Cote d'Ivoire is complex. Since 1985, when the Government dissolved COFRUITEL--the sole production and marketing cooperative--growth in the pineapple industry has been constrained. Production has declined steadily from 294,764 tons in 1985 to a 5 year low of 206,000 tons projected for 1989. The downward spiral was precipitated by falling export prices for fresh pineapples that made it difficult for growers to cover production costs and meet credit obligations. Because COFRUITEL was a monopoly, it could rely on a specific membership base for repayment and, thus, freely extended credit to growers. The newly-formed, private cooperatives that replaced COFRUITEL have been reluctant to provide credit to their members. The revamped export quota system allows farmers to change cooperatives at will, in effect, jeopardizing the credit stability of the cooperatives. As a result, planted area has declined due to lack of capital and many farmers have abandoned their plantations altogether.

Production in Taiwan began to decline in 1971. A moderate reversal of this downward spiral began in 1984 and continued through 1988 bolstered by rising sales of the Tainoun No. 4 peelable pineapple, both locally and in Japan. Record yields during the 1988 season were attained via favorable weather conditions and extensive applications of growth regulators. Abuse of the growth regulators compromised quality, resulting in weaker demand from Japan and a substantial drop in both farmgate and export prices. Growers immediately responded by planting less area for harvest during 1989 causing production prospects to plummet. The projected 1989 crop of 200,000 tons reflects a 12-percent decline in yields, but a much better crop in terms of quality.

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Table 15

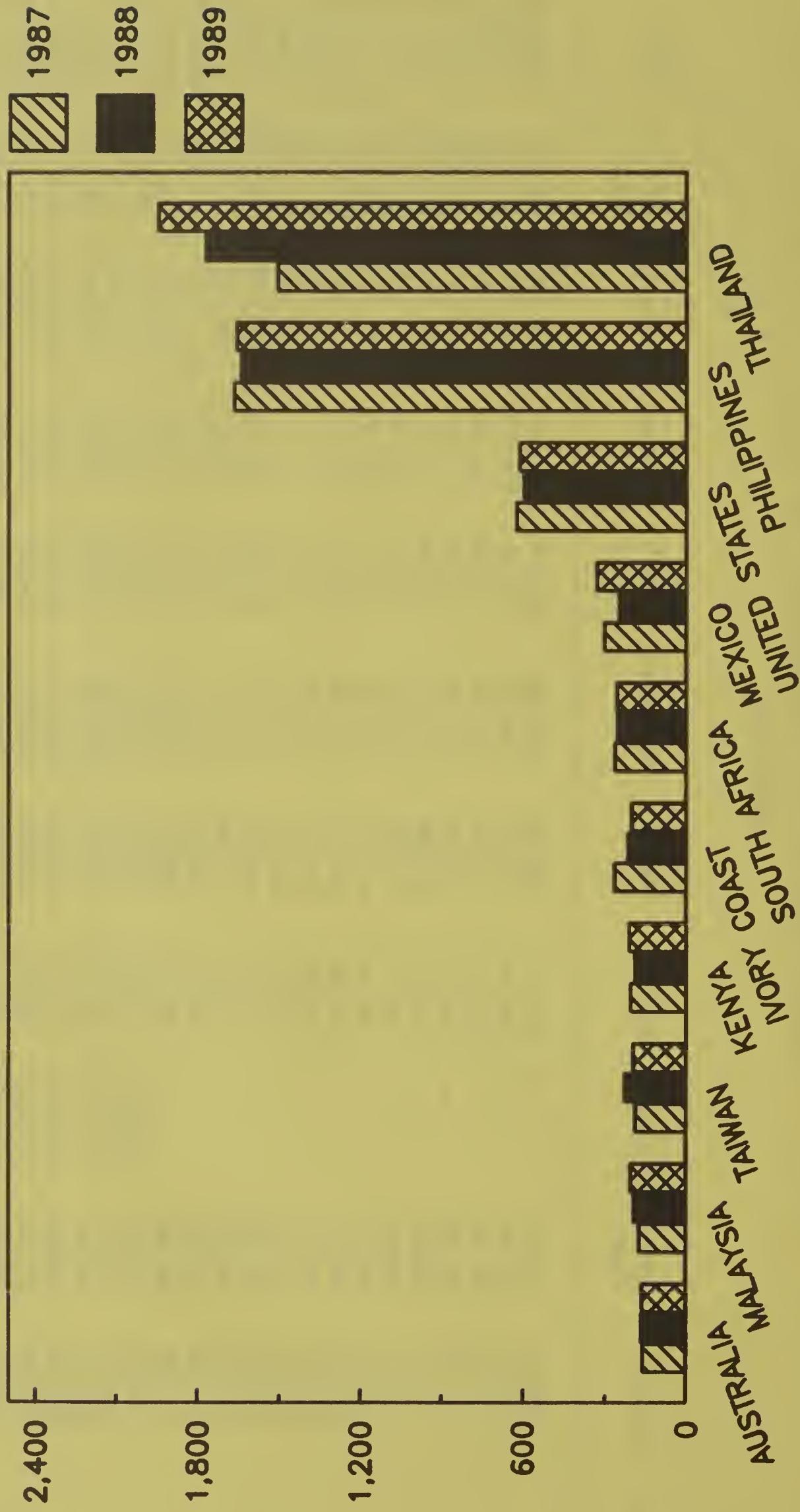
FRESH PINEAPPLE: PRODUCTION IN SELECTED COUNTRIES  
(METRIC TONS)

Year	Australia	Ivory Coast	Kenya	Malaysia	Mexico	Philippines	South Africa	Taiwan	Thailand	United States	Total		
1970	128,021	—	283,246	248,800	365,000	160,539	338,191	242,489	865,455	2,742,320			
1971	128,000	—	268,190	297,300	380,000	173,506	358,529	124,826	854,570	2,720,667			
1972	126,000	—	255,391	218,200	375,000	173,994	334,384	318,789	859,105	2,862,167			
1973	126,000	—	241,538	268,300	333,235	147,389	327,982	483,493	734,820	2,863,767			
1974	119,761	—	245,339	397,800	405,000	184,226	307,851	803,720	635,030	3,327,727			
1975	95,451	—	199,292	371,300	400,000	169,374	318,978	1,151,865	653,175	3,599,435			
1976	119,000	—	194,418	442,000	752,000	172,317	278,830	1,295,850	616,885	4,138,300			
1977	101,000	—	191,844	510,000	780,000	158,825	282,193	1,499,400	625,960	4,391,222			
1978	103,000	—	190,344	568,300	815,000	167,300	249,627	1,540,000	612,350	4,557,921			
1979	133,000	—	192,646	632,100	875,000	212,119	244,777	1,372,000	617,795	4,566,437			
1980	123,265	—	176,123	604,600	901,000	221,879	228,804	1,673,000	596,020	4,827,691			
1981	123,350	—	153,631	550,000	1,242,133	242,710	181,039	1,824,080	576,970	5,200,615			
1982	125,528	—	188,331	440,000	1,682,889	244,059	144,900	1,439,250	607,815	5,106,168			
1983	111,280	—	183,400	250,000	1,718,730	209,600	115,194	1,465,750	654,990	4,890,418			
1984	115,100	—	227,564	174,538	260,000	1,448,622	184,263	123,609	1,472,496	544,310	4,718,502		
1985	124,500	—	294,764	167,000	182,420	325,000	1,601,922	247,600	149,745	1,768,944	512,560	5,374,455	
1986	155,000	—	280,487	174,058	292,500	1,635,000	247,900	157,941	1,635,723	586,040	5,395,947		
1987	165,000	—	210,000	178,473	306,000	1,670,000	267,400	193,337	1,509,965	627,770	5,397,041		
1988	168,300	—	216,441	190,500	194,512	247,500	1,640,000	228,127	1,770,931	597,835	5,508,646		
1989 1/	167,500	215,000	206,000	206,500	333,000	1,660,000	259,700	200,000	1,950,000	616,885	5,814,585		

1/ Preliminary.

Chart 5

FRESH PINEAPPLE:  
PRODUCTION IN SELECTED COUNTRIES  
(THOUSAND METRIC TONS)



FOREIGN PRODUCTION ESTIMATES DIVISION, FAS, USDA  
APRIL 1989

## FORESTRY PRODUCTION IN SELECTED COUNTRIES OF WESTERN EUROPE

The forest products industry in Western Europe is quite diverse. During 1988, over 135 million cubic meters (CUM) of forest products, ranging from logs to sawn timber and various types of panel products were produced. Three countries--West Germany, France, and Austria--account for nearly 85 percent of Western Europe's forestry output. Forestry production in West Germany has increased 9 percent since 1984 with the greatest gains occurring in the sawnwood sector--specifically softwood lumber--which is utilized primarily for housing construction.

Rising demand on both domestic and export markets has fueled a gradual expansion in all sectors of France's wood industry. Sustained activity in the domestic building industry as well as the packaging and woodpulp industries has expanded total forestry production by 4 percent each of the past 3 years.

For the past 5 years, total forestry production in Austria has vacillated according to world market conditions. Production slumps coincided with downturns in the world construction industry. However, the panel products sector has proven extremely resilient. Growing consumption of particleboard for use in prefabricated houses and furniture has supported a steady rise in output since 1984.

Table 16

### FORESTRY PRODUCTION IN SELECTED COUNTRIES OF WESTERN EUROPE (1,000 Cubic Meters)

	1984	1985	1986	1987	1988 1/
AUSTRIA	19,693	18,934	19,269	19,102	20,457
BELGIUM/LUXEMBOURG	5,470	5,787	6,257	6,606	6,854
DENMARK	3,242	2,929	2,830	2,895	2,829
FRANCE	42,682	41,995	43,680	45,313	47,113
GERMANY, FED. REP. OF	43,523	47,510	47,343	47,082	47,530
NETHERLANDS	742	958	946	989	993
UNITED KINGDOM	6,038	7,342	8,050	8,498	9,355
TOTAL	121,390	125,455	128,375	130,485	135,131

1/ Preliminary.

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Table 17

AUSTRIA - FOREST PRODUCTS  
(1,000 Cubic Meters)

	1984	1985	1986	1987	1988	1/
<u>Roundwood 2/</u>						
Wood Chips	3,405	3,884	4,068	3,902	4,454	
Softwood Logs	8,225	7,355	7,646	7,463	7,814	
Temperate Hardwood Logs	481	386	416	395	387	
Total	12,111	11,625	12,130	11,760	12,655	
<u>Sawnwood</u>						
Softwood Lumber	6,039	5,748	5,544	5,686	6,060	
Temperate Hardwood Lumber	237	214	204	199	190	
Railroad Ties/Sleepers	43	38	35	24	20	
Total	6,319	6,000	5,783	5,909	6,270	
<u>Panel Products</u>						
Temperate Hardwood Veneer	19	19	19	18	19	
Temperate Hardwood Plywood	4	5	11	18	18	
Fiberboard 3/	88	86	90	89	95	
Particleboard	1,152	1,199	1,236	1,308	1,400	
Total	1,263	1,309	1,356	1,433	1,532	
Total	19,693	18,934	19,269	19,102	20,457	

1/ Preliminary. 2/ Excludes pulpwood and fuelwood, poles, piles, posts, pitprops. 3/ Includes hardboard, medium density fiberboard, insulation board.

Table 18

BELGIUM/LUXEMBOURG - FOREST PRODUCTS  
(1,000 Cubic Meters)

	1984	1985	1986	1987	1988 1/
<u>Roundwood 2/</u>					
Pulpwood, Wood Chips	980	1,020	1,130	1,240	1,300
Softwood Logs	1,000	1,100	1,250	1,400	1,500
Temperate Hardwood Logs	750	750	765	775	755
Poles, Piles, Posts, Pitprops	200	200	200	200	200
Total	2,930	3,070	3,345	3,615	3,755
<u>Sawnwood</u>					
Softwood Lumber	435	500	575	600	650
Temperate Hardwood Lumber	160	168	173	176	197
Tropical Hardwood Lumber	57	65	65	60	65
Railroad Ties/Sleepers	16	16	16	16	16
Total	668	749	829	852	928
<u>Panel Products</u>					
Temperate Hardwood Veneer	35	38	42	40	42
Softwood Plywood	55	50	58	60	62
Medium Density Fiberboard	8	10	13	14	17
Insulation Board	24	20	20	0	0
Particleboard	1,750	1,850	1,950	2,025	2,050
Total	1,872	1,968	2,083	2,139	2,171
Total	5,470	5,787	6,257	6,606	6,854

1/ Preliminary. 2/ Excludes Fuelwood.

Table 19

**DENMARK - FOREST PRODUCTS**  
**(1,000 Cubic Meters)**

	1984	1985	1986	1987	1988 1/
<b><u>Roundwood</u></b>					
Wood Chips, Pulpwood, Fuelwood	958	946	1,007	565	591
Softwood Logs	1,040	784	660	1,024	1,000
Temperate Hardwood Logs	490	449	450	650	600
Poles, Piles, Posts, Pitprops	18	14	13	10	9
Total	2,506	2,193	2,130	2,249	2,200
<b><u>Sawnwood</u></b>					
Softwood Lumber	260	340	291	244	250
Temperate Hardwood Lumber	69	62	58	50	60
Tropical Hardwood Lumber	0	1	0	0	0
Railroad Ties/Sleepers	21	4	4	10	6
Total	350	407	353	304	316
<b><u>Panel Products</u></b>					
Temperate Hardwood Veneer	9	9	11	10	9
Temperate Hardwood Plywood	0	0	1	2	2
Tropical Hardwood Plywood	1	3	2	2	2
Particleboard	376	317	333	328	300
Total	386	329	347	342	313
Total	3,242	2,929	2,830	2,895	2,829

1/ Preliminary.

Table 20

FRANCE - FOREST PRODUCTS  
(1,000 Cubic Meters)

	1984	1985	1986	1987	1988 1/
<b>Roundwood</b>					
Pulpwood, Fuelwood	9,533	9,606	10,250	10,490	10,448
Wood Chips	1,725	1,946	2,218	2,317	2,432
Softwood Logs	11,003	10,785	11,111	11,580	12,100
Temperate Hardwood Logs	7,637	7,924	8,149	8,712	9,500
Poles, Piles, Posts, Pitprops	334	289	265	229	220
Total	30,232	30,550	31,993	33,328	34,700
<b>Sawnwood</b>					
Softwood Lumber	5,617	5,699	5,740	5,933	6,200
Temperate Hardwood Lumber	2,762	2,729	2,865	2,912	2,960
Tropical Hardwood Lumber	511	473	525	517	490
Railroad Ties/Sleepers	139	146	158	168	190
Total	9,029	9,047	9,288	9,530	9,840
<b>Panel Products</b>					
Temperate Hardwood Veneer	31	28	25	25	23
Temperate Hardwood Plywood	475	490	471	430	485
Fiberboard 2/	270	270	275	290	305
Particleboard	1,645	1,610	1,628	1,710	1,760
Total	2,421	2,398	2,399	2,455	2,573
Total	41,682	41,995	43,680	45,313	47,113

1/ Preliminary. 2/ Includes Hardboard, Medium Density Fiberboard, Insulation Board.

Table 21

FEDERAL REPUBLIC OF GERMANY - FOREST PRODUCTS  
(1,000 Cubic Meters)

	1984	1985	1986	1987	1988	1/
<u>Roundwood</u>						
Pulpwood, Fuelwood	10,683	12,804	12,969	12,437	12,535	
Softwood Logs	12,709	15,041	12,854	13,005	13,200	
Temperate Hardwood Logs	3,108	3,148	3,275	3,181	2,920	
Poles, Piles, Posts, Pitprops	90	82	79	70	65	
Total	26,590	31,075	29,177	28,693	28,720	
<u>Sawnwood</u>						
Softwood Lumber	8,139	7,895	9,545	9,680	9,700	
Temperate Hardwood Lumber	1,593	1,550	1,608	1,571	1,600	
Railroad Ties/Sleepers	194	185	191	158	170	
Total	9,926	9,630	11,344	11,409	11,470	
<u>Panel Products</u>						
Temperate Hardwood Veneer	404	398	391	400	420	
Temperate Hardwood Plywood	360	336	342	350	370	
Hardboard	219	219	199	203	210	
Insulation Board	50	40	40	40	40	
Particleboard	5,974	5,812	5,850	5,987	6,300	
Total	7,007	6,805	6,822	6,980	7,340	
Total	43,523	47,510	47,343	47,082	47,530	

1/ Preliminary.

Table 22

NETHERLANDS - FOREST PRODUCTS  
(1,000 Cubic Meters)

	1984	1985	1986	1987	1988 1/
<b>Roundwood 2/</b>					
Softwood Logs	198	230	230	230	230
Temperate Hardwood Logs	153	220	260	280	280
Total	351	450	490	510	510
<b>Sawnwood</b>					
Softwood Lumber	155	172	152	164	165
Temperate Hardwood Lumber	134	182	161	178	182
Tropical Hardwood Lumber	0	58	49	45	43
Total	289	412	362	387	390
<b>Panel Products</b>					
Temperate Hardwood Veneer	0	5	4	4	4
Tropical Hardwood Veneer	16	13	12	11	12
Tropical Hardwood Plywood	17	18	16	15	15
Insulation Board	39	20	22	22	22
Particleboard	30	40	40	40	40
Total	102	96	94	92	93
Total	742	958	946	989	993

1/ Preliminary. 2/ Excludes pulpwood, fuelwood, poles, piles, posts, pitprops.

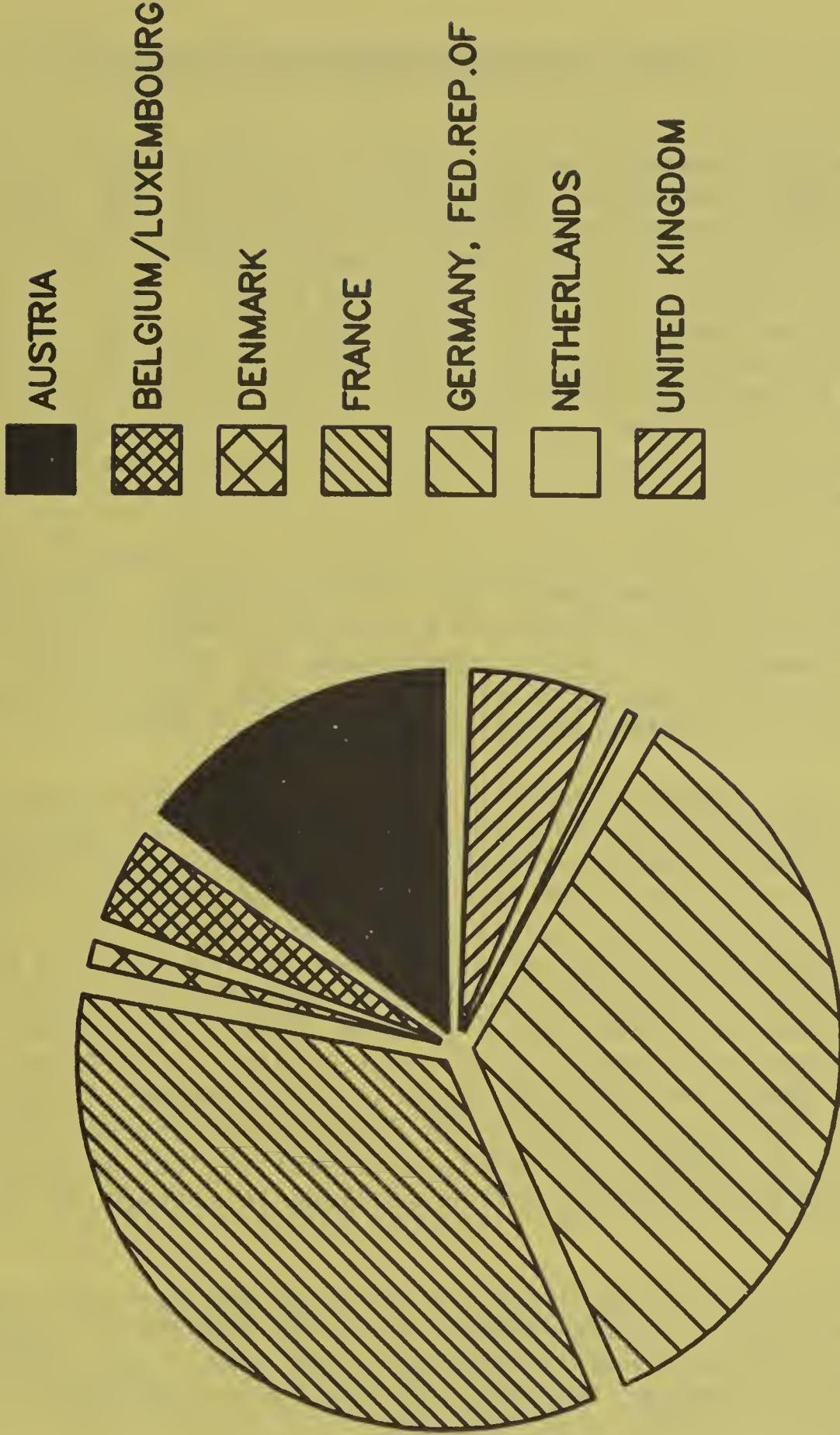
Table 23

UNITED KINGDOM - FOREST PRODUCTS  
(1,000 Cubic Meters)

	1984	1985	1986	1987	1988	1/
<u>Roundwood</u>						
Softwood Logs	1,850	2,463	2,414	2,625	2,825	
Temperate Hardwood Logs	535	520	648	440	550	
Other 2/	1,395	1,682	2,068	2,280	2,625	
Total	3,780	4,665	5,130	5,345	6,000	
<u>Sawnwood</u>						
Softwood Lumber	1,178	1,420	1,452	1,560	1,625	
Temperate Hardwood Lumber	317	276	334	338	340	
Tropical Hardwood Lumber	23	19	21	22	22	
Total	1,518	1,715	1,807	1,920	1,987	
<u>Panel Products</u>						
Tropical Hardwood Veneer	10	8	9	9	10	
Tropical Hardwood Plywood	17	15	16	15	15	
Hardboard	25	10	9	10	10	
Medium Density Fiberboard	48	66	70	70	72	
Insulation Board	29	28	29	31	31	
Particleboard	611	835	980	1,098	1,230	
Total	740	962	1,113	1,233	1,368	
Total	6,038	7,342	8,050	8,498	9,355	

1/ Preliminary. 2/ Includes pulpwood, fuelwood, poles, piles, posts and pitprops.

FORESTRY PRODUCTION IN SELECTED COUNTRIES  
OF THE EUROPEAN COMMUNITY  
(1,000 CUBIC METERS)



1988

## WORLD FLAXSEED PRODUCTION AND SITUATION

OVERVIEW: World flaxseed area has steadily trended downward for the past two decades. Cheaper substitute oils for industrial use have reduced the demand for linseed oil to only specialized industrial needs. As more productive land has been switched to alternative crops, technology and improved farming practices have generally sustained flaxseed yields. The 1988/89 world flaxseed crop, estimated at 1.74 million tons, is only 46 percent of the all time high of 3.8 million tons attained during 1970/71. The 1988/89 crop is estimated at 4.0 million hectares, only 52 percent of the 1970/71 level. This downward trend is forecast to continue, but at a slower pace as the development of price competitive linseed oil substitutes are not expected in the short-run.

Some 21 countries produce flaxseed, primarily for industrial oil use with linseed meal a welcome by-product for animal rations. Linen also is regarded as a primary product, with flaxseed a secondary resource in specialized operations. However, the overall world quantity is very small. Four countries account for nearly 90 percent of total world area and production. They are Argentina, Canada, India, and the Soviet Union.

SOUTH ASIA: India has the world's largest area under flaxseed production, but ranks only third in total world output. Flaxseed production in India is a winter crop grown primarily in the Uttar Pradesh, Madhya Pradesh, Maharashtra, and Bihar regions. Yields are low, .28-.30 tons per hectare under good conditions, as the crop is typically grown on marginal land without the benefit of irrigation. Flaxseed and linseed oil is utilized as a human food source as well as an industrial product in India, with roughly 6 percent of domestic flaxseed production eaten as seed primarily in tribal areas, and nearly 30 percent of linseed oil production eaten. Continued strong domestic demand for oilseeds in India has tempered the slowdown in flaxseed area and production. Crop area in 1982/83 had dropped to 70 percent of the level of 1977/78, or an average 121,200 hectares annually. During the next 5 years, leading up to 1987/88, flaxseed area declined an average of only 10,400 hectares per year.

Flaxseed production in Bangladesh and Pakistan has remained nearly constant over the past decade. Total production during 1988/89 in Bangladesh is estimated at 8,000 tons and in Pakistan 6,000 tons. No significant change is expected in either country's production levels for the future.

SOVIET UNION: Harvested area in the Soviet Union is estimated at 1.2 million hectares during 1988/89, second only to India. An increase in crop area over the past several years has occurred in response to higher government procurement prices and bonuses in an effort to improve animal feed production, in addition to increased demand by the Soviet fiber industry. Flaxseed received a 63-percent increase in procurement prices, from R245 to R400. Prices are now equal to that for rapeseed and greater than for sunflowerseed (R350). The impact of these programs will be dampened by historically low seed production. The Soviet Union, like India, struggles with low flaxseed yields ranging between .18-.22 tons per hectare. During 1988/89, flaxseed production reached only 260,000 tons, ranking fourth worldwide. It is likely that flaxseed area will be bolstered by government programs in the coming year, however their impact on total production will be marginal.

SOUTH AMERICA: With an estimated production level of 450,000 tons during 1988/89, down 100,000 tons from 1987/88, Argentina will replace Canada as the world's largest flaxseed producer. This is not expected to continue even into next year, however, as Argentina's production has been declining steadily for some time, and Canadian production is expected to rebound from the 1988/89 drought. Crop area, which declined from 690,000 hectares in 1987/88 to 550,000 hectares during 1988/89, has shifted to more profitable crops.

Uruguay's flaxseed production during 1988/89 is estimated at 3,000 tons from 4,000 hectares, up 3,000 tons from 1987/88. Both area and production have declined significantly over the past decade. In 1977/78, Uruguay harvested 40,000 tons of flaxseed from 79,000 hectares.

NORTH AMERICA: Canadian flaxseed production fell short of expectations for 1988/89, as both harvested area and yields were hit hard by poor weather conditions, resulting in production 43 percent below 1987/88 -- a drop from 729,000 to 414,000 tons. However, Canada still accounted for 32 percent of world output. Planting prospects for 1989/90 could be higher, however, as drought-induced higher prices for all oilseeds have continued strong. Flaxseed prices, C.I.F. Rotterdam for October 1988-January 1989, have averaged \$367 per ton, compared to \$194 for the same period last year.

Drought conditions also took its toll on flaxseed area and yields in the United States, the world's fifth largest producer. Area declined 51 percent from 1987/88 to 91,000 hectares, while yields dropped 55 percent. Total production dropped from 189,000 tons in 1987/88 to only 41,000 tons during 1988/89.

Mexico's production of flaxseed has remained relatively unchanged, at 10,000 tons annually, for the past decade and is not expected to change.

EASTERN EUROPE: Total flaxseed production in Eastern Europe has fallen nearly 60 percent from its peak of 186,000 tons from 248,000 hectares in 1971/72. Harvested flaxseed area during 1988/89, at 144,000 hectares, is the second lowest area since the 141,000 hectares estimated for 1984/85. Average crop yields of .63 tons per hectare during 1988/89 brought the total estimated flaxseed crop to 76,000 tons.

EUROPEAN COMMUNITY: Flaxseed production in the European Community during 1988/89 increased for the second year in a row to 55,000 tons, 12 percent above 1987/88 and 25 percent above 1986/87. Renewed interest in flaxseed production in the United Kingdom in recent years has offset declines in France and Italy. France produced 28,000 tons during 1988/89, 65 percent of its output in 1977/78, while Italy's production fell from 6,000 in 1977/78 to only 1,000 tons in 1988/89. The United Kingdom has become a significant flaxseed producer in the European Community. While the United Kingdom produced virtually no flaxseed in 1977/78, it accounted for an estimated 12,000 tons in 1988/89. Flaxseed production in the Netherlands and Belgium-Luxembourg have not fluctuated significantly for over a decade. In 1988/89, the Netherlands produced 6,000 tons and Belgium-Luxembourg 8,000 tons.

MIDDLE EAST: Egypt is the largest producer of flaxseed in the Middle East with production estimated at 20,000 tons from 16,000 hectares during 1988/89, unchanged from 1987/88. Flaxseed production has been declining since its peak level of 30,000 tons in 1977/78. Government policies are not

particularly directed to oilseeds production and market prices are generally below production costs. Domestic flaxseed production falls short of Egypt's industrial demand forcing the government to fulfilled shortfalls with imported linseed oil. Without government incentives, flaxseed production will likely trend further downward for the foreseeable future.

**SPECIES DESCRIPTION:** The flax plant, Linum usitatissimum L., produces both seed and fiber. These products come primarily from two distinct types of flax. The type grown for seed is an annual plant, usually short (12 to 36 inches), profusely branched, and produces an average of 6-8 seeds per boll or capsule under normal conditions. The seed is valued as a food source or in the form of a meal. Flaxseed oil is most valued as an industrial product due to its high drying quality. The oil is composed of mostly polyunsaturated fatty acids which form a film by oxidation. Both the quality and quantity of flaxseed are significantly effected by its environment during growth. If high temperatures and drought occur within the first 3 weeks after flowering, seed numbers will be reduced and their oil level and quality will suffer.

Flax grown for fiber is typically tall, with few branches, and produces only a small number of seeds. These long fibers are used primarily for the production of linen. A secondary product of flax grown for seed is straw containing short fibers. These are commercially valuable in the production of cigarettes and fine bond paper.

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Rod Paschal (202) 382-8881

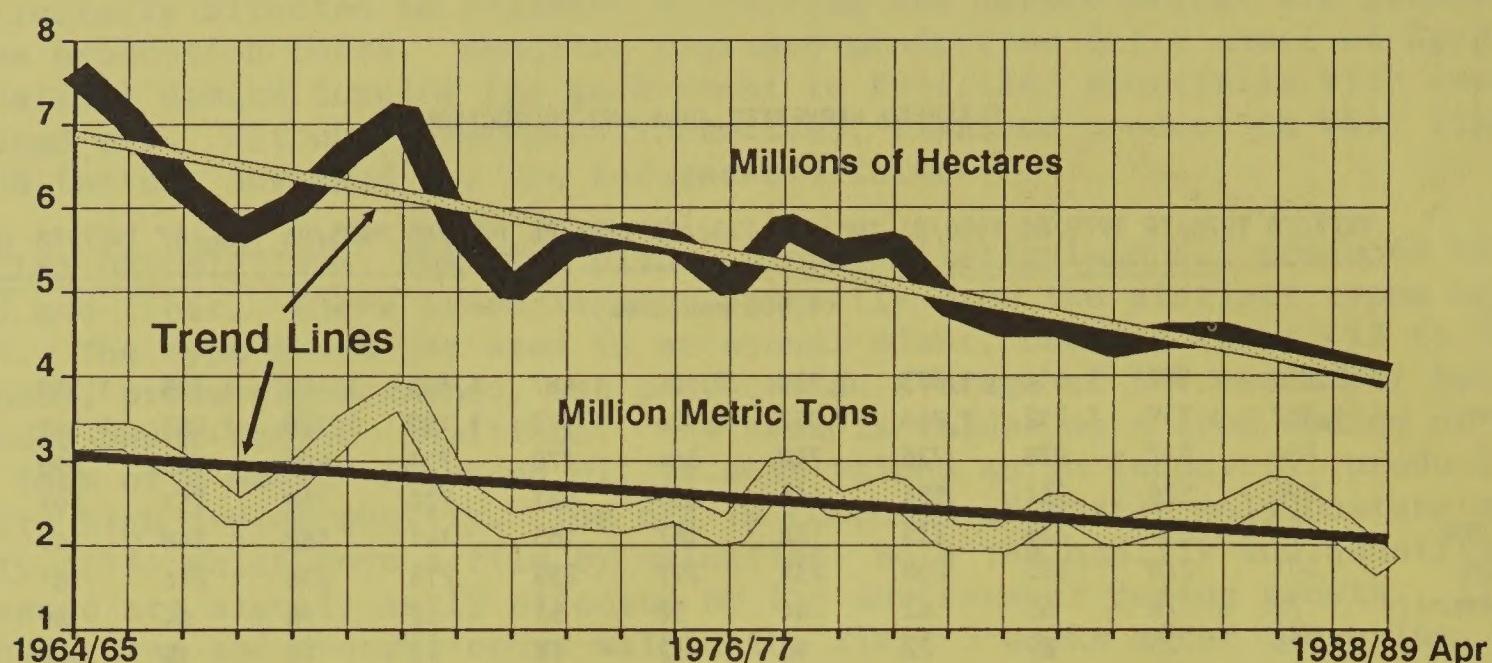
Table 24

## FLAXSEED HARVESTED AREA AND PRODUCTION

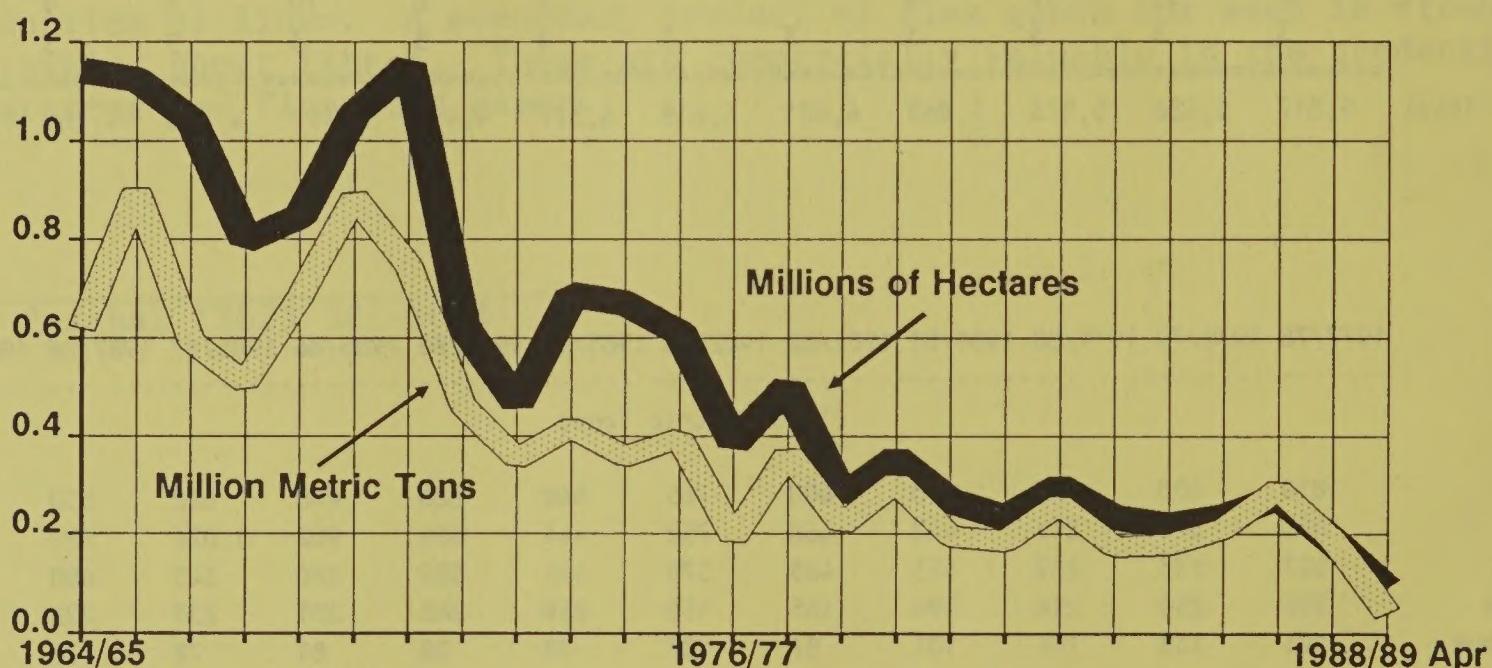
	April 1977/78 1978/79 1979/80 1980/81 1981/82 1982/83 1983/84 1984/85 1985/86 1986/87 1987/88 1988/89											
HARVESTED AREA	(1,000 Hectares)											
India	2,010	2,092	1,614	1,673	1,820	1,404	1,487	1,395	1,420	1,225	1,350	1,350
Soviet Union	1,362	1,339	1,212	1,266	1,057	1,126	1,173	1,159	1,100	1,053	1,069	1,200
Argentina	884	817	978	726	740	864	770	732	688	745	690	550
Canada	596	526	931	554	466	631	431	720	740	755	591	546
Eastern Europe	204	217	238	213	188	167	163	141	162	148	149	144
United States	501	278	355	268	234	297	235	218	236	276	187	91
European Community	72	76	68	62	44	52	51	62	78	64	69	75
Egypt	25	25	29	22	16	32	13	12	18	15	16	16
Bangladesh	15	15	15	15	15	15	15	15	15	15	15	15
Pakistan	10	13	10	11	11	8	9	9	10	10	10	10
Mexico	12	11	8	6	10	1	9	9	9	9	9	9
Uruguay	79	61	98	36	10	13	13	10	8	4	1	4
Australia	44	13	17	10	7	5	5	6	10	8	9	4
Iran	3	3	3	3	3	3	3	3	3	3	3	3
Total	5,817	5,486	5,576	4,865	4,621	4,618	4,377	4,491	4,497	4,330	4,168	4,017
PRODUCTION	(1,000 Metric Tons)											
Argentina	810	600	743	610	600	765	660	626	460	622	550	450
Canada	653	572	815	442	468	752	444	694	902	1,026	729	414
India	527	535	269	423	483	375	444	389	380	343	400	400
Soviet Union	300	250	254	196	165	150	259	248	201	233	228	260
Eastern Europe	106	138	106	101	87	87	70	80	81	72	76	76
European Community	62	46	56	48	30	43	32	42	54	44	49	55
United States	363	219	305	196	185	261	175	178	211	293	189	41
Egypt	30	31	34	27	18	38	16	20	22	19	20	20
Mexico	18	15	10	8	12	1	10	10	10	10	10	10
Bangladesh	7	7	7	7	8	8	8	8	8	8	8	8
Pakistan	6	7	6	7	7	6	5	5	6	6	6	6
Australia	28	13	14	7	6	3	4	6	12	9	9	4
Iran	3	3	3	3	3	3	3	3	3	3	3	3
Uruguay	40	31	65	21	6	9	9	7	6	3	1	3
Total	2,953	2,467	2,687	2,096	2,078	2,501	2,139	2,316	2,356	2,691	2,278	1,750

Chart 7

## World Flaxseed Area & Production



## U.S. Flaxseed Area & Production



## Canadian Flaxseed Area & Production

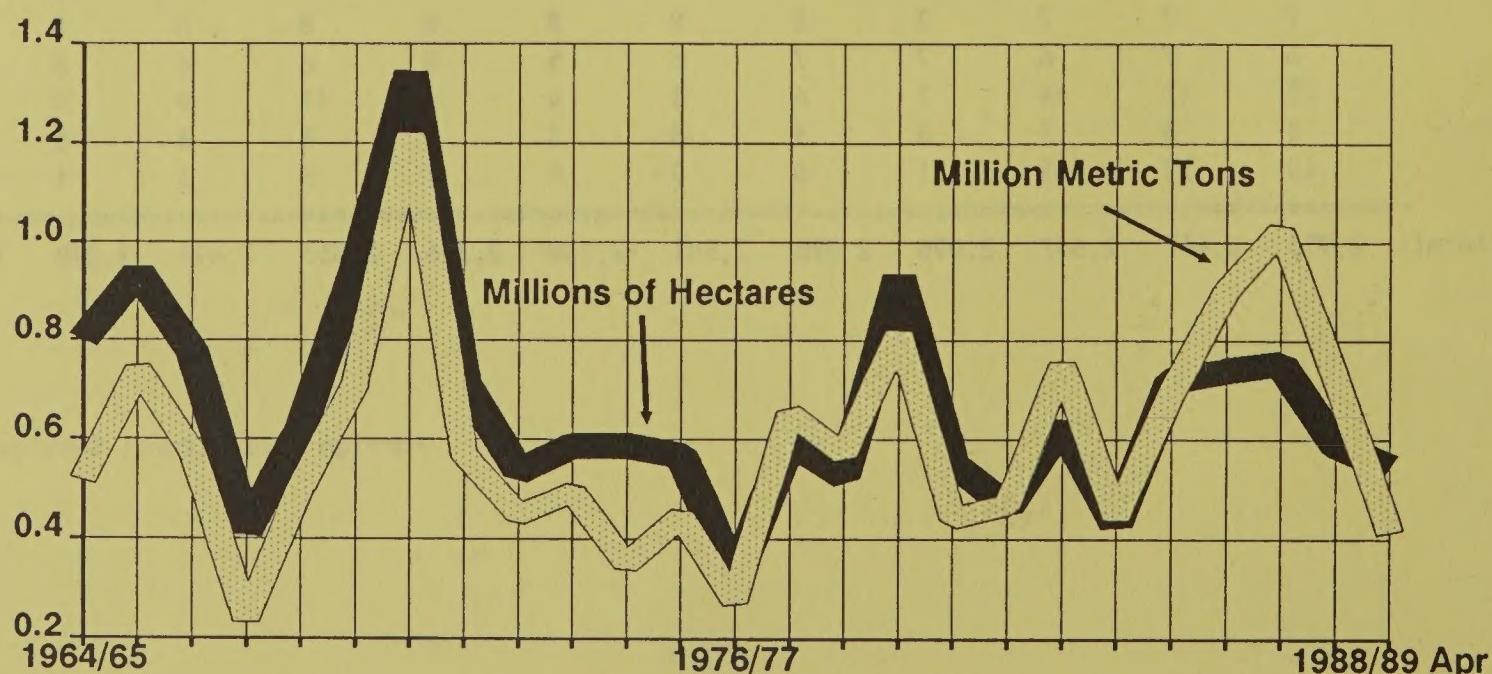
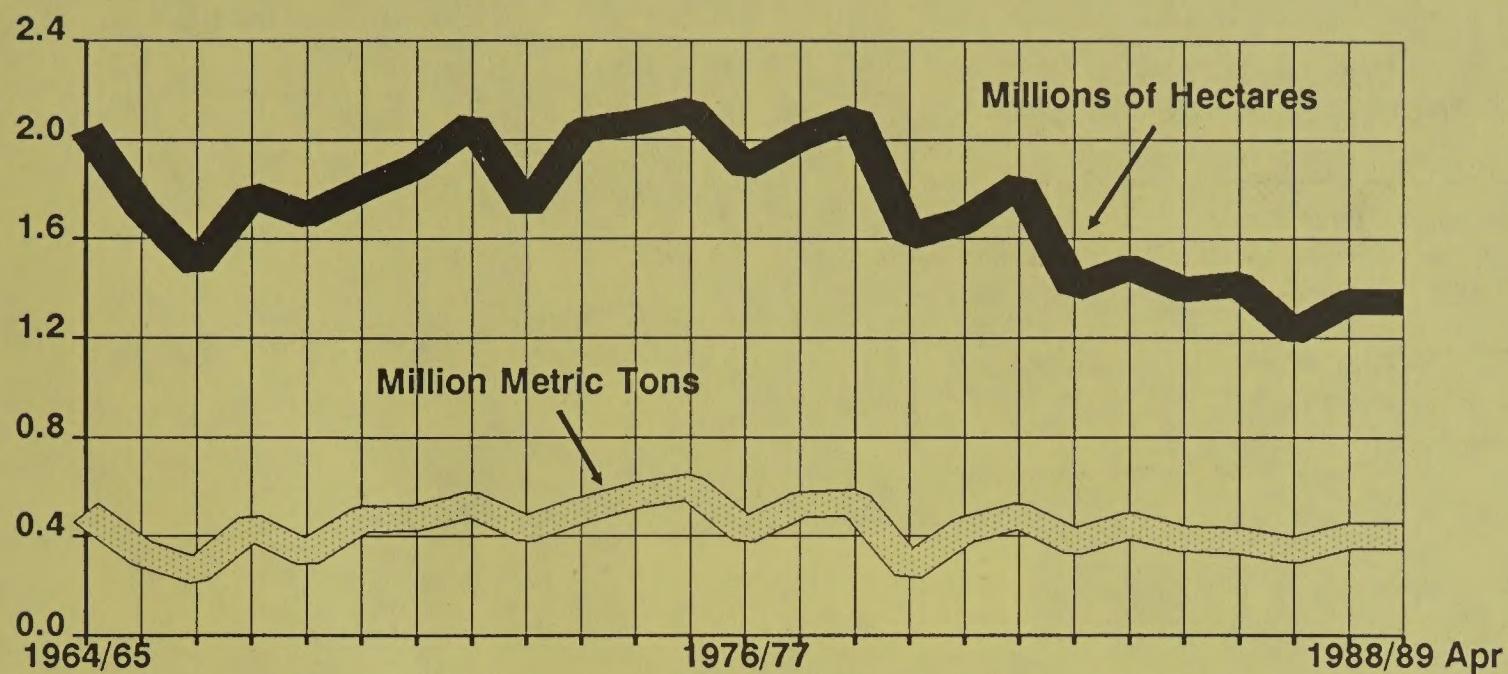
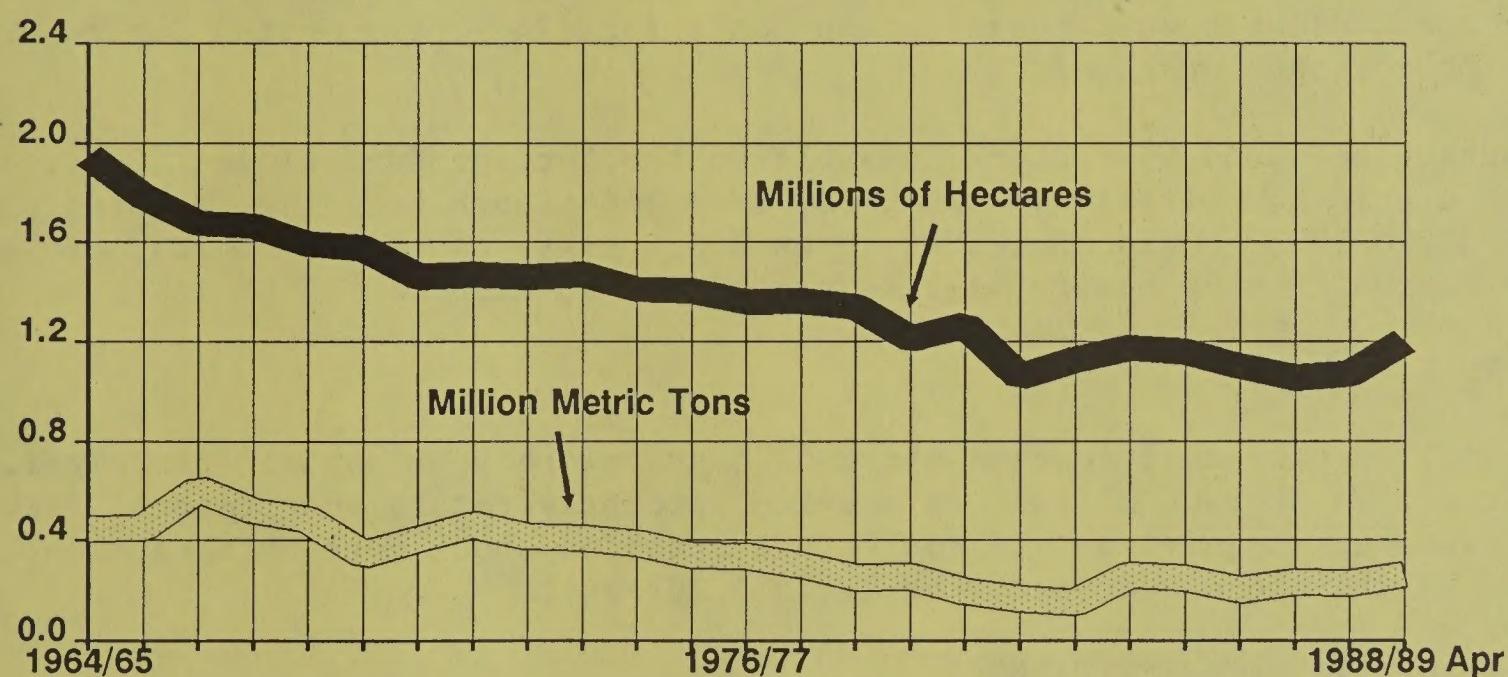


Chart 8

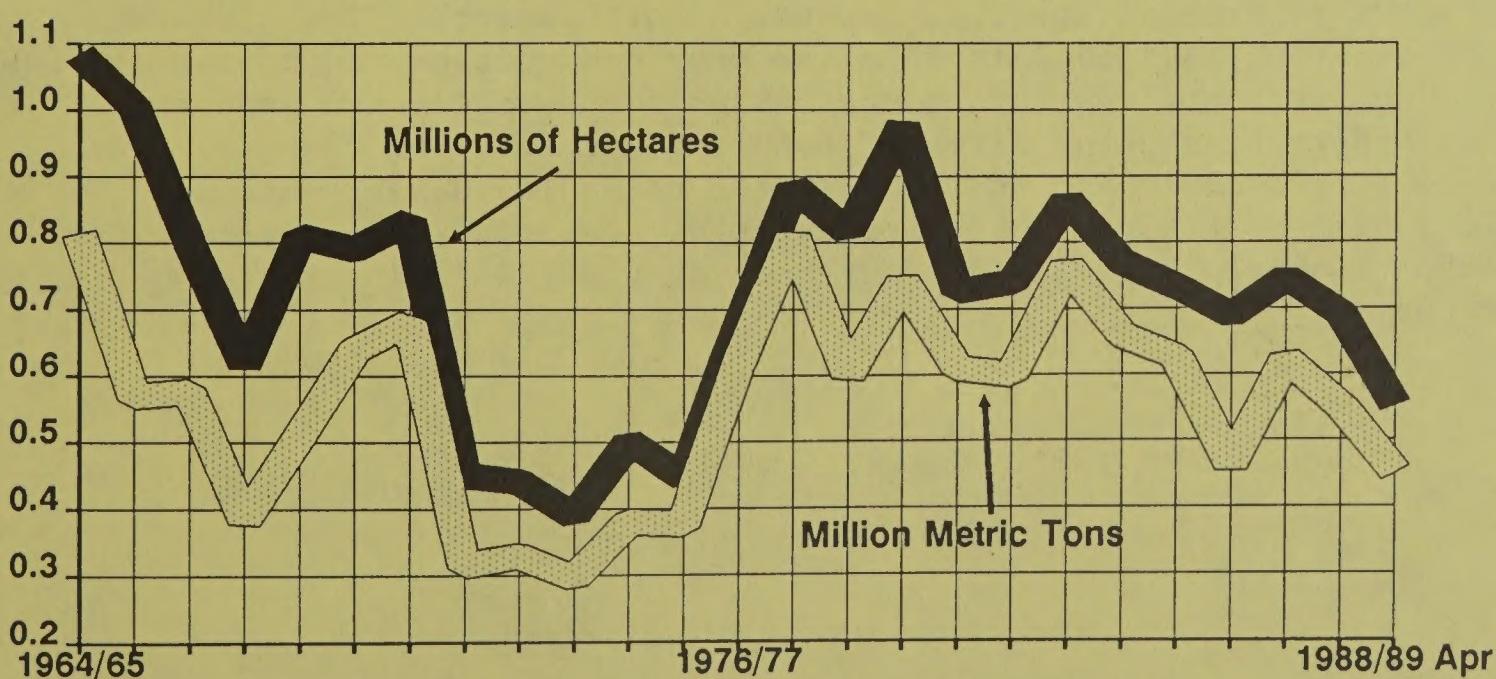
## India Flaxseed Area & Production



## USSR Flaxseed Area & Production



## Argentine Flaxseed Area & Production



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